McGill University Libraries
3 100 785 288 5



McGill University, Montreal.

VISITOR :—

His Excellency

THE RIGHT HON. THE MARQUIS OF LORNE, K.T., P.C.,

Governor General of Canada, &c.

GOVERNORS :—

[*Being the Members of the Royal Institution for the Advancement of Learning.*]

The Hon. CHARLES DEWEY DAY, LL.D., D.C.L.

President and Chancellor of the University.

The Hon. JAS. FERRIER, Senator, M.L.C.

The Hon. CHRISTOPHER DUNKIN, M.A., D.C.L.

PETER REDPATH, Esq.

GEORGE MOFFATT, M.A.

JOHN H. R. MOLSON, Esq.

The Hon. FREDERICK W. TORRANCE, M.A., B.C.L.

CHARLES J. BRYDGES, Esq.

The Hon. SIR ALEXANDER T. GALT, K.C.M.G.

The Hon. SIR FRANCIS HINCKS, K.C.M.G., C.B.

JOHN MOLSON, Esq.

JOSEPH HICKSON, Esq.

[The Board of Governors has, under the Royal Charter, the power to frame Statutes, to make Appointments, and to administer the Finances of the University.]

Secretary, Registrar and Bursar :—

[*And Secretary of the Royal Institution.*]

William Craig Baynes, B.A., Residence and Office, East Wing, McGill College, Office hours, 10 to 2.

James W. Brakenridge, B.C.L., Clerk, Residence 39 Lorne Avenue.

LE3
M2
1880-81

PRINCIPAL :—

JOHN WILLIAM DAWSON, M.A., LL.D., F.R.S., *Vice-Chancellor.*

[The Principal has, under the Statutes, the general superintendence of all affairs of the College and University; under such regulations as may be in force.]

FELLOWS :—

VEN. ARCHDEACON LEACH, D.C.L., LL.D., Vice-Principal and Dean of the Faculty of Arts.

HENRY ASPINWALL HOWE, LL.D., Governors' Fellow.

THE HON. J. J. C. ABBOTT, D.C.L., Q.C., Dean of the Faculty of Law.

GEORGE W. CAMPBELL, M.A., M.D., LL.D., Dean of the Faculty of Medicine.

REV. JOHN COOK, D.D., Principal of Morrin College, Quebec.

ALEXANDER JOHNSON, M.A., LL.D., Vice-Dean of the Faculty of Arts, Governors' Fellow.

REV. GEORGE CORNISH, M.A., LL.D., Elective Fellow, Faculty of Arts.

REV. HENRY WILKES, M.A., D.D., LL.D., Principal of the Congregational College of British North America.

REV. D. H. MACVICAR, LL.D., Principal of the Presbyterian College of Montreal.

R. A. RAMSAY, M.A., B.C.L., Representative Fellow in Law.

WILLIAM H. HICKS, ESQ., Principal of McGill Normal School.

J. J. MCLAREN, M.A., B.C.L., Representative Fellow in Law.

JOHN R. DOUGALL, M.A., Representative Fellow in Arts.

WILLIAM H. KERR, Q.C., D.C.L., Acting Dean of the Faculty of Law, Governors' Fellow.

REV. J. CLARKE MURRAY, LL.D., Elective Fellow, Faculty of Arts.

J. S. C. WURTELE, B.C.L., Elective Fellow, Faculty of Law.

HENRY T. BOVEY, M.A., C.E., Dean of the Faculty of Applied Science.

BERNARD J. HARRINGTON, B.A., Ph.D., Elective Fellow, Fac. App. Science.

REV. CHARLES A. TANNER, Principal St. Francis College, Richmond.

REV. E. J. REXFORD, B.A., Representative Fellow in Arts.

ROBERT BELL, Grad. Civ. Eng., M.D., Representative Fellow in App. Science.

REV. JOHN JENKINS, D.D., LL.D., Governors' Fellow.

REV. J. F. STEVENSON, B.A., D.D., Chairman Protestant Board of School Commissioners.

REV. CANON HENDERSON, M.A., Principal of the Montreal Diocesan Theological College.

REV. GEORGE DOUGLAS, LL.D., Principal of Wesleyan Theological College.

GILBERT L. GIRDWOOD, M.D., Elective Fellow, Faculty of Medicine.

HON. L. RUGGLES CHURCH, M.D., Representative Fellow in Medicine.

WILLIAM OSLER, M.D., Representative Fellow in Medicine.

CLEMENT H. MCLEOD, Ma. E., Representative Fellow in Applied Science.

[The Governors, Principal and Fellows constitute, under the Charter, the Corporation of the University, which has the power, under the Statutes, to frame regulations touching Courses of Study, Matriculation, Graduation and other Educational matters; and to grant Degrees.]

OFFICERS OF INSTRUCTION:

JOHN WILLIAM DAWSON, M.A., LL.D., F.R.S. *Principal, Logan Professor of Geology and Professor of Natural History.*	East Wing McGill College.
VEN. ARCHDEACON LEACH, D.C.L., LL.D. *Vice Principal, Dean of the Faculty of Arts and Molson Professor of English Literature.*	16 University Street.
HENRY ASPINWALL HOWE, LL.D. *Emeritus Professor of Mathematics and Natural Philosophy.*	Outremont.
HON. J. J. C. ABBOTT, D.C.L. *Dean of the Faculty of Law and Emeritus Professor in the Faculty of Law.*	916 Sherbrooke Street.
GEORGE W. CAMPBELL, M.A., M.D., LL.D. *Dean of the Faculty of Medicine and Emeritus Professor in the Faculty of Medicine.*	707 Sherbrooke Street.
WILLIAM E. SCOTT, M.D. *Professor of Anatomy.*	109 Union Avenue.
WILLIAM WRIGHT, M.D. *Professor of Materia Medica and Pharmacy.*	84 St. Famille Street.
ROBERT P. HOWARD, M.D. *Professor of the Theory and Practice of Medicine.*	47 Union Avenue.
REV. A. DE SOLA, LL.D. *Professor of Hebrew and Oriental Literature.*	73 McGill Col. Av.
HON. WILLIAM BADGLEY, D.C.L. *Emeritus Professor in the Faculty of Law.*	64 McGill Col. Av.
R. G. LAFLAMME, D.C.L. *Emeritus Professor in the Faculty of Law.*	23 Berri Street.
CHARLES F. A. MARKGRAF, M.A. *Professor of German Language and Literature.*	McGill Col. Library.
D. C. MCCALLUM, M.D. *Professor of Midwifery and Diseases of Women and Children.*	45 Union Avenue.
ALEXANDER JOHNSON, M.A., LL.D. [Trin. Col. Dublin]. *Professor of Mathematics and Redpath Professor of Natural Philosophy, Vice-Dean of the Faculty of Arts.*	70 McGill Col. Av.
REV. GEORGE CORNISH, M.A., LL.D. *Professor of Classical Literature.*	149 Metcalf Street.
PIERRE J. DAREY, M.A., B.C.L. *Professor of French Language and Literature.*	39 McGill College Av.
ROBERT CRAIK, M.D. *Emeritus Professor in the Faculty of Medicine.*	2 Phillips Square.
EDWARD CARTER, Q.C., D.C.L. *Emeritus Professor in the Faculty of Law.*	31 Cadieux Street.
G. E. FENWICK, M.D. *Professor of Surgery.*	1404 St. Catherine Street.
JOSEPH M. DRAKE, M.D. *Emeritus Professor in the Faculty of Medicine.*	45 Beaver Hall Terrace.
N. W. TRENHOLME, M.A., B.C.L. *Professor of Roman Law.*	Clarke Avenue.

J. S. C. WURTELE, B.C.L.
Professor of Commercial Law. — 416 St. Antoine Street.

WILLIAM H. KERR, D.C.L.
Professor of International Law, Acting Dean of the Faculty of Law. — 387 Sherbrooke.

GILBERT P. GIRDWOOD, M.D.
Professor of Practical Chemistry. — 28 Beaver Hall Terrace.

REV. J. CLARKE MURRAY, LL.D. [Glasgow].
Professor of Logic and John Frothingham Professor of Mental and Moral Philosophy. — 111 Mackay Street.

HON. H. F. RAINVILLE, LL.B. [Laval].
Professor of Real Estate Law. — St. Lawrence Hall.

GEORGE ROSS, M.A., M.D.
Professor of Clinical Medicine. — 49 Union Avenue.

BERNARD J. HARRINGTON, B.A., Ph.D.
Professor of Assaying and Mining, and Lecturer on Chemistry. — Walbrae Pl., Univ. St.

THOMAS G. RODDICK, M.D.
Professor of Clinical Surgery. — 44 Beaver Hall. Terrace.

WILLIAM OSLER, M.D.
Professor of Institutes of Medicine. — 1351 St. Catherine Street.

WILLIAM GARDNER, M.D.
Professor of Medical Jurisprudence. — 551 St. Joseph Street.

HENRY T. BOVEY, M.A., A.I.C.E., Fellow Queen's Coll. Cambridge.
Dean of the Faculty of Applied Science. Professor of Civil Engineering and Applied Mechanics. — 31 McTavish Street.

CHARLES E. MOYSE, B.A. [London].
Professor of History and Associate Professor of English Language and Literature. — McGill College.

JOHN S. ARCHIBALD, B.A., B.C.L.
Professor of Criminal and Constitutional Law. — 113 Mackay Street.

EDMOND LAREAU, B.C.L.
Professor of Legal History. — 293 Notre Dame Street.

MATTHEW HUTCHINSON, B.C.L.
Associate Professor of Civil Procedure. — Oliver Street, Cote St. Antoine.

J. EMERY ROBIDOUX, B.C.L.
Associate Professor of Real Estate Law. — 35 St. Hubert Street.

C. H. MCLEOD, Ma. E.
Lecturer in Geometrical Drawing and Superintendent of Meteorological Observatory. — 69 Mansfield Street.

FRANCIS J. SHEPHERD, M.D.
Demonstrator of Anatomy. — 85 Mansfield Street.

FRANK BULLER, M.D.
Lecturer on Diseases of the Eye and Ear. — 1351 St. Catherine Street.

GEORGE H. CHANDLER, B.A.
Lecturer in Mathematics, Faculty of Applied Science. — 32 Lorne Avenue.

JOHN ANDREW,
Instructor in Elocution. — 64 Roy Street.

FREDERICK S. BARNJUM,
Instructor in Gymnastics. — 19 University Street.

General Statement.

SESSION OF 1880–81.

The Forty-eighth Session of the University, being the Twenty-eighth under the amended charter, will commence in the Autumn of 1880.

By Virtue of the Royal Charter, granted in 1821 and amended in 1852, the Governors, Principal and Fellows of McGill College constitute the Corporation of the University; and, under the statutes framed by the Board of Governors, with approval of the Visitor, have the power of granting Degrees in all the Arts and Faculties, in McGill College, and Colleges affiliated thereto.

The Statutes and Regulations of the University have been framed on the most liberal principles, with the view of affording to all classes of persons the greatest possible facilities for the attainment of mental culture and professional training. In its religious character the University is Protestant, but not denominational: and while all possible attention will be given to the character and conduct of students, no interference with their peculiar religious views will be sanctioned.

The educational work of the University is carried on in McGill College, Montreal, and in the several Affiliated Colleges and Schools.

I. McGILL COLLEGE.

THE FACULTY OF ARTS.—The complete course of study extends over four Sessions, of eight months each: and includes Classics and Mathematics, Experimental Physics, English Literature, Logic, Mental and Moral Science, Natural Science, and one Modern Language, or Hebrew; all which subjects are imperative in the first two years of the Course; but in the third and fourth years options are allowed in favour of the Honour Courses in Classics, Mathematics, Mental and Moral Science, Natural Science, and English Literature. Certain exemptions are also allowed to Professional Students. The course of study leads to the Degrees of B.A., M.A., and LL.D.

THE FACULTY OF APPLIED SCIENCE provides a thorough professional training, extending over three or four years, in Civil Engineering, Mechanical Engineering, Mining Engineering and Assaying, and Practical Chemistry, leading to the Degrees of Bachelor of Applied Science, Master of Engineering and Master of Applied Science.

THE FACULTY OF MEDICINE.—The complete course of study in Medicine extends over four Sessions, of six months each, and leads to the Degree of M.D., C.M. There is also a Summer Course which is optional.

THE FACULTY OF LAW.—The complete course in Law extends over three Sessions, of six months each, and leads to the degrees of B.C.L., and D.C.L.

II. AFFILIATED COLLEGES.

Students of Affiliated Colleges are matriculated in the University, and may pursue their course of study wholly in the Affiliated College, or in part in McGill College, and may come up to the University Examinations on the same terms with the Students of McGill College.

MORRIN COLLEGE, *Quebec*—Is affiliated in so far as regards Degrees in Arts and Law.

[Detailed information may be obtained from Rev. John Cook, D.D., Principal.]

ST. FRANCIS COLLEGE, *Richmond*—Is affiliated in so far as regards the Intermediate Examinations in Arts.

[Detailed information may be obtained from Rev. C. A. Tanner, Principal, Richmond, P. Q.]

III. AFFILIATED THEOLOGICAL COLLEGES.

Affiliated Theological Colleges have the right of obtaining for their Students the advantage, in whole or in part, of the course of study in Arts, with such facilities in regard to exemptions as may be agreed on.

THE CONGREGATIONAL COLLEGE OF BRITISH NORTH AMERICA, *Montreal*.

THE PRESBYTERIAN COLLEGE OF MONTREAL, in connection with the Canada Presbyterian Church.

THE DIOCESAN COLLEGE OF MONTREAL.

THE WESLEYAN COLLEGE OF MONTREAL.

IV. AFFILIATED SCHOOLS.

THE MCGILL NORMAL SCHOOL provides the training requisite for Teachers of Elementary and Model Schools and Academies. Teachers trained in this School are entitled to Provincial Diplomas.

THE MODEL SCHOOLS OF THE MCGILL NORMAL SCHOOL are Elementary Schools, divided into a Boys' Department, Girls' Department and Primary School.

COLLEGIATE INSTITUTES, ACADEMIES, and HIGH SCHOOLS may be affiliated in so far as regards Matriculation in Arts and Applied Science, under regulations which will be found on a subsequent page.

[Details of all the above will be found in the Annual Calendar of the University and in Announcements of the special Colleges, Faculties and Schools, which may be had on application to the Registrar of the University or the Principals or Secretaries of the several Colleges, &c.]

Faculty of Arts.

THE PRINCIPAL (Ex-officio).

Professors :—LEACH.
DE SOLA.
DAWSON.
MARKGRAF.
JOHNSON.

Professors :—CORNISH.
DAREY.
MURRAY.
HARRINGTON.
MOYSE.

Dean of the Faculty :—Ven. ARCHDEACON LEACH, D.C.L., LL.D.
Vice-Dean :—ALEXANDER JOHNSON, LL.D.
Librarian :—Professor MARKGRAF, M.A.

[CONTENTS.—*Course of Study*, § I. ; *Matriculation*, &c., § II. ; *Exhibitions*, &c., § III. ; *Examinations*, &c., § IV. ; *Exemptions*, &c., § V. ; *Medals*, &c., § VI. ; *Licensed Boarding-houses*, § VII. ; *Attendance*, &c., § VIII. ; *Library*, &c., § IX. ; *Fees*, &c., § X. ; *Courses of Lectures*, § XI.]

The next Session of this Faculty will commence on September 15th, 1880, and will extend to April 30th, 1881.

§ I. COURSE OF STUDY.

1. Undergraduates are arranged according to their standing, as Students of the First, Second, Third or Fourth Years. They are required to attend all the Courses of Lectures appointed for their several years, under the Regulations as to attendance and conduct stated in § VIII ; the only exceptions are those in favour of Honour and Professional Students, stated in § V.

ORDINARY COURSE FOR THE DEGREE OF B.A.

First Year.—Classics ; French or German ; English Language and Literature ; Pure Mathematics ; History ; Elementary Chemistry.

Second Year.—Classics ; French or German ; Logic and Elementary Psychology ; Pure Mathematics ; Botany.

Third Year.—Classics ; Rhetoric and English Literature ; Moral Philosophy ; Mixed Mathematics ; Experimental Physics ; Zoology.

Fourth Year.—Classics ; English Literature ; Mental Philosophy ; Mixed Mathematics ; Experimental Physics ; Mineralogy and Geology.

Undergraduates are required to study either French or German for two years, (viz., in the First and Second Years) taking the same language in each year. Any Student failing to pass the Examination at the end of the Second Year will be required to pass a Supplemental Examination, or to take an additional Session in the Language in which he has failed. In addition to the obligatory, there are other Lectures, attendance on which is optional.

The Lectures in Modern Languages will be so arranged that Students competent and desirous to take in the same years the Lectures in French and in German, may do so.

Students who intend to join any Theological School, on giving written notice to this effect at the beginning of the First Year, may take Hebrew instead of French or German.

The Faculty may permit any Student to take Spanish instead of French or German.

2. At the examination for the Degree of B.A., Honours are given in the following subjects, for which special Honour Courses are provided :—[For details see under §XI.]

1. *Classical Languages and Literature.*
2. *Mathematics and Physics.*
3. *Logic and Mental and Moral Philosophy.*
4. *English Language, Literature, and History.*
5. *Geology and other Natural Sciences.*

Students taking B.A. Honours in any of the above Courses may omit two of the ordinary subjects in the Degree Examination, under the conditions stated in § V., 11.

Honours are given in the above subjects in the Third Year also, and in Mathematics in the First and Second Years as well.

---

§ II. MATRICULATION AND ADMISSION.

1. Candidates for Matriculation as Undergraduates are required to present themselves to the Dean of the Faculty, on the 16th of September, for examination; they may, however, enter after the commencement of the Session, if, on examination, found qualified to join the classes.

The subjects of examination for entrance into the First Year are, Classics, Mathematics and English.

In Classics.—Greek.—Xenophon, Anabasis, Book I.; or, Homer, Iliad, Book I.; Greek Grammar.

Latin.—Cicero, Orations I. and II. against Catiline; or, Virgil, Æneid, Book I.; Latin Grammar.

In Mathematics.—Arithmetic ; Algebra, to Simple Equations, inclusive ; Euclid's Elements, Books I., II., III.

In English.—Writing from Dictation. English Composition. A paper on English Grammar including Analysis. A paper on the leading events of English History.

[Associates in Arts who, at their special Examination, have passed in Latin, Greek, English, Algebra and Geometry, are not required to present themselves for the Matriculation Examination.]

2. Candidates not matriculated in the University, or Partial Students of the First Year, may be admitted to the standing of students of the Second Year, provided that they pass the Sessional Examinations of the First Year, or an examination in the following subjects at the beginning of the Second Year :—

In Classics.—Greek.—Homer, Book VI. ; Xenophon, Anabasis, Book I. ; Grammar and Prose Composition.

Latin.—Virgil, Æneid, Book VI. ; Cicero, Orations IV. against Catiline ; Grammar and Prose Composition.

[Equivalent authors in Latin and Greek may be received by the Examiners for entrance into either year.]

In Mathematics.—

Euclid.—Books I., II., III., IV., VI., with defs. of Book V. (omitting Propositions 27, 28, 29, of Book VI.)

Algebra.—To end of Quadratic equations (Colenso's Alg)

Trigonometry.—Galbraith and Haughton's Trigonometry, Chaps. 1, 2, 3, 4, 6, to beginning of numerical solution of plane triangles.

Arithmetic.—Elementary rules, Proportion, Interest, Discount, &c., Vulgar and Decimal Fractions, Square Root.

In English Literature.—English Grammar including Analysis, English Composition, English History.

In French or German.—Grammar and easy Translation.

[Candidates must satisfy the Professor of French that they have a fair knowledge of De Fivas' Grammaire des Grammaires as far as Syntax ; failing this or the knowledge of German requisite to join the regular class, they may *commence* the study of German, which they will then be required to carry on for two years.]

Students of other Universities may be admitted, on the production of Certificates, to a like standing in this University, after examination by the Faculty.

PARTIAL STUDENTS.—Candidates for Matriculation as Partial Students, taking three or more Courses of Lectures, or as Students in any Special Course, will be examined in the subjects necessary thereto, as may from time to time be determined by the Faculty.

OCCASIONAL STUDENTS.—Persons desirous of taking one or two Courses of Lectures, as Occasional Students, may apply to the Vice-Dean for entry in his

Register, and may procure from the Secretary tickets for the Lectures they desire to attend.

Every student is expected to present, on his entrance, a written intimation from his parent or guardian, of the name of the minister of religion under whose care and instruction it is desired that the student shall be placed, who will thereupon be invited to place himself in communication with the Faculty on the subject. Failing such intimation from his parent or guardian, the Faculty will endeavour to establish befitting relations.

---

§ III. SCHOLARSHIPS AND EXHIBITIONS.

General Regulations.

1. A Scholarship is tenable for *two* years. An Exhibition for *one* year.

2. Scholarships are open for competition to Students who have passed the University Intermediate Examination, provided that not more than three Sessions have elapsed since their Matriculation; and also to Candidates who have obtained what the Faculty may deem equivalent standing in some other University.

3. Scholarships are divided into two classes :—[1] *Science* Scholarships; [2] *Classical and Modern Language* Scholarships. The subjects of Examination for each are as follows :—

Science Scholarships.—Differential and Integral Calculus; Analytic Geometry; Plane and Spherical Trigonometry; Higher Algebra and Theory of Equations; Botany; Chemistry; Logic.

Classical and Modern Language Scholarships.—Greek; Latin; English Composition; English Language, Literature and History; French.

4. Exhibitions are assigned to the First and Second Years.

First Year Exhibitions are open for competition to candidates for entrance into the First Year.

Second Year Exhibitions are open for competition to Students who have passed the First Year Sessional Examination, provided that not more than two Sessions have elapsed since their Matriculation; and also to candidates for entrance into the Second Year.

The subjects of Examination are as follows :—

First Year Exhibitions.—Classics, Mathematics, English.

Second Year Exhibitions.—Classics, Mathematics, English Language and Literature, Chemistry, French.

5. The First and Second Year Exhibition Examinations will, for Candidates who have not previously entered the University, be regarded as Matriculation Examinations.

6. No student can hold more than one Exhibition or Scholarship at the same time; but four of the first Year Exhibitioners will be granted exemption from

the Sessional fees throughout their College Course, under Presentation Scholarships from the Governor General. (See below.)

7. Exhibitions and Scholarships will not necessarily be awarded to the best answerers at the Examinations. Absolute merit will be required.

8. If in any one College Year there be not a sufficient number of Candidates showing absolute merit, any one or more of the Exhibitions or Scholarships offered for competition may be transferred to more deserving Candidates in another year.

9. A successful Candidate must, in order to retain his Scholarship or Exhibition, proceed regularly with his College Course to the satisfaction of the Faculty.

10. The annual income of the Scholarships or Exhibitions will be paid in four instalments, viz :—In October, December, February and April, about the 20th day of each month.

11. The Examinations will be held at the beginning of every Session.

There are at present thirteen Scholarships and Exhibitions.

THE JANE REDPATH EXHIBITION, founded by Mrs. Redpath, of Terrace Bank, Montreal :—value, $100 yearly.

THE MCDONALD SCHOLARSHIPS AND EXHIBITIONS, ten in number, established by W. C. McDonald, Esq., Montreal :—value, $125 each, yearly.

THE GOVERNORS' SCHOLARSHIP, established by the Board of Governors :—value about $120 yearly.

THE CHARLES ALEXANDER SCHOLARSHIP, founded by Charles Alexander, Esq., Montreal, for the encouragement of the study of Classics and other subjects : —value, $120 yearly.

EXHIBITIONS AND SCHOLARSHIPS TO BE OFFERED IN SEPTEMBER, 1880.

First Year.

THREE EXHIBITIONS.—Two of $125, one of $100. The examinations will be in the following subjects :—

Greek.—Homer, Iliad, bk. IV. ; Xenophon, Anabasis, bk. II. ; Demosthenes, Philippic I.

Latin.—Cicero, In Catilinam, Oratt. III. and IV. ; Horace, Odes, bk. I. ; Ovid, Fasti, bk. I., vss. 1–300.

Latin Prose Composition.

A paper on Greek and Latin Grammar.

Text-books.—Hadley's Elements of Greek Grammar.—Arnold's Greek Prose Composition, Exercises 1 to 25. Dr. Wm. Smith's Smaller Latin Grammar, and Principia Latina, Part IV.

Mathematics.—Euclid, bks. I., II., III., IV. ; Algebra to end of Harmonical Progression (Colenso). Arithmetic.

English.—English Grammar and Composition—(Bain's Grammar as far as Derivation.) Special exercises in Grammar and Composition.

Additional Exhibitions may be given in the First Year, should there not be qualified candidates in the Second and Third Years.

Second Year.

TWO EXHIBITIONS.—One of $125, and one of $100.

The Examinations will be in the following subjects :—

Greek.—Homer, Odyssey, bk. XII.; Xenophon, Hellenics, bk. II.; Herodotus, bk. VI., Chaps. 71 to end.

Latin.—Horace, Odes, bk. III.; Livy, bk. IX., Chaps. 1 to 22, inclusive; Virgil, Æneid, bk. VI.; Cicero, Select Letters (Pritchard and Bernard).

Greek and Latin Prose Composition.

A paper on Grammar and History.

Text-books.—Dr. William Smith's History of Greece. Liddell's History of Rome. Hadley's Greek Grammar. Smith's Student's Latin Grammar. Arnold's Greek Prose Composition. Smith's Principia Latina, Parts IV. and V.

Mathematics.—The Mathematics (Ordinary and Honour) of First Year.

English.—Bain's Grammar,—Special exercises in Grammar and Composition.

Chemistry.—The metallic Elements as in Wilson's Elementary Chemistry.

French.—De Fivas' Grammaire des Grammaires, to paragraph No. 422. Lafontaine, les Fables, Livres III. and IV. Molière, le Bourgeois gentilhomme.

Third Year.

THREE SCHOLARSHIPS.—Three of $125 yearly.

Two of these will be given on Examinations in Science as follows :—one in Mathematics and Logic, and one in Natural Science and Logic :—

1. *Mathematics.*—Differential Calculus (Williamson, Chaps. 1, 2, 3, 4, 9; Chap. 12, Arts. 168–193 inclusive; Chap. 17, Arts. 225–243 inclusive). Integral Calculus (Williamson, Chaps. 1, 2, 3, 4, 5; Chap. 7, Arts. 126–140 inclusive; Chap. 8, Arts. 150–156 inclusive; Chap. 9, Arts. 168–176 inclusive). Analytic Geometry (Salmon's Conic Sections, Chaps. 1–14 inclusive). Hind's Plane and Spherical Trigonometry. Salmon's Modern Higher Algebra (first six chapters). Todhunter's Theory of Equations.

   Logic, as in Whately's Logic, Books II. and III.

2. *Natural Science.*—*Botany*, as in Gray's Structural and Systematic Botany. *Canadian Botany*, including a practical acquaintance with all the orders of Phænogams and Acrogens. *Chemistry*, as in Wilson's Elements.

   Logic, as in Whately's Logic, Books II and III.

One will be given on an Examination in Classics and Modern Languages, as follows :—

Classics.—*Greek.*—Euripides, Medea ; Demosthenes, the Olynthiacs ; Xenophon, Hellenics, Book I. ; Herodotus, Book VIII. ; Thucydides, Book VI. *Latin.*—Horace, Satires, Book I., and Epistles, Book I. ; Virgil, Georgics, Book I. ; Terence, Adelphi ; Tacitus, Annals, Book I. ; Pliny, Select Letters (Pritchard and Bernard ; Clarendon Press Series). Greek and Latin Prose Composition.

History—Text-books.—Rawlinson's Manual of Ancient History ; Smith's Greece ; Liddell's Rome.

English Language and Literature.—Spalding's English Literature ; Shakespeare, Julius Cæsar ; Trench, Study of Words ; Trench, English, Past and Present.

English Composition.—(High marks will be given for this subject, in order to encourage the practice of it, after the models of the best writers.)

French.—Racine, Britannicus ; Molière, les Femmes savantes. De Fivas' Grammaire des Grammaires. Les Ecrivains célèbres de la France :—Bonnefon. Translation from English into French.

Classical Subjects for Exhibitions, September, 1881.

GREEK.—*First Year.*

Homer, Iliad, bk. IV. ; Xenophon, Anabasis, bk. V. ; Demosthenes Phillippic I.

LATIN.—*First Year.*

Cicero, In Catilinam, Oratt. III. and IV. ; Horace, Odes, bk. I. ; Ovid, Fasti, vss. 1–300.

GREEK.—*Second Year.*

Homer, Odyssey, bk. XI. ; Xenophon, Hellenics, bk. II. ; Herodotus, bk. VI., Chaps. 71 to end of Book.

LATIN.—*Second Year.*

Virgil, Æneid, bk. VI. ; Horace, Odes, bk. III. ; Livy, bk. IX., Chap. 23 to end ; Cicero, Select Letters (Pritchard and Bernard).

EXEMPTIONS FROM FEES UNDER PRESENTATION SCHOLARSHIPS, &c.

A number of these are in the gift of Benefactors, and entitle the Students holding them to exemption from the Sessional Fees in the Faculty of Arts. Sixteen have been placed by the Governors at the disposal of His Excellency the Governor General. Candidates must pass the usual Matriculation Examination.

[By command of His Excellency, four of these Exemptions will be offered for competition in the First Year Exhibition Examinations of the ensuing session.]

Eight Exemptions from fees may be granted by the Board of Governors, from time to time, to the most successful Students who may present themselves as candidates. By order of the Board one of these is given annually to the *Dux* of the High School of Montreal, and one to the Dux of any other Academy or High School sending up, in one year, three or more candidates competent to pass creditably the Matriculation Examination.

In the event of any Academy or High School in the Province of Quebec offering for competition among pupils an Annual Bursary in the Faculty of Arts, of not less than $80, the Governors will add the amount of the fees of tuition thereto.

An Exemption from fees may be given annually to any teacher holding the Model School or Academy Diploma of the McGill Normal School, recommended by the Principal and Professors of the School, and passing creditably the Matriculation Examination in Arts.

---

§ IV. EXAMINATIONS.

COLLEGE EXAMINATIONS.

1. There are two Examinations in each year; one at Christmas and the other at the end of the Session. In each of these, the students who pass are arranged according to their answering, as 1st Class, 2nd Class, and 3rd Class.

In the Fourth Year only, the University Examination for B.A. takes the place of the Sessional Examination.

Fourth Year Students are required at the Christmas Examination's to pass in all he subjects of the obligatory lectures, even though some of the subjects do no form part of their B.A. Examination.

2. Students who fail in any subject in the Christmas Examinations are required to pass a Supplemental Examination in that subject before admission to the Sessional Examinations.

3. Students who fail in one subject in the Sessional Examinations are required to pass a Supplemental Examination in it. Should they fail in this, they will be required in the following Session to attend the Lectures and pass the Examination in the subject in which they have failed, in addition to those of the Ordinary Course, or to pass the Examination alone without attending Lectures, at the discretion of the Faculty.

4. Failure in two or more subjects at the Sessional Examinations involves the loss of the Session. The Faculty may permit the Student to recover his standing by passing a Supplemental Examination at the beginning of the ensuing Session. For the purpose of this

Regulation, Classics and Mathematics are each regarded as two subjects.

5. The time for the Supplemental Examination will be fixed by the Faculty; and such Examination will not be granted at any other time except by special permission of the Faculty and on payment of a fee of $5.

UNIVERSITY EXAMINATIONS.

I. FOR THE DEGREE OF B.A.

There are three University Examinations:—The *Matriculation*, at entrance; the *Intermediate*, at the end of the Second Year; and the *Final*, at the end of the Fourth Year.

1. The subjects of the Matriculation Examination are stated in Section §II.

2. In the Intermediate Examination the subjects are Classics and Pure Mathematics, Logic, and the English Language, with one other Modern Language, or Botany. Theological Students are allowed to take Hebrew instead of a Modern language. The subjects for the Examination of 1881 are as follows:—

Classics.—Greek.—Euripides.—Medea.
Latin.—Horace, Epistles, Book I.
Latin Prose Composition.

Mathematics.—Arithmetic.
Euclid, Books I., II., III, IV., VI., and defs. of Book V.
Algebra, to Quadratic Equations inclusive.
Trigonometry, including use of Logarithms.

Logic.—Jevons' Elementary Lessons in Logic, pp. 1–182.

English.—An English Essay. Spalding's History of English Literature. A paper on the essentials of English History (Collier).

With one of the following:—

1. *Botany and Vegetable Physiology.*—Structural and Systematic Botany, as in Gray's Text-Book, omitting the Descriptions of the Orders.
2. *French.*—Molière:—Le Bourgeois gentilhomme, l'Avare. Racine:—Britannicus. Les Ecrivains célèbres de la France:—Bonnefon. Translation into French.
3. *German.*—Schmidt's German Guide; Adler's Reader; Translation into German.
4. *Hebrew.*—Grammar to the end of the Irregular verbs. Translation from the Book of Genesis, first three chapters. Exercises:—Hebrew into English, and English into Hebrew.

3. For the Final Examination six subjects are offered for selection; namely:—[1] Classics, [2] Mixed Mathematics, [3] Mental and Moral Philosophy, [4] Natural Science, [5] Experimental Physics, [6] One Modern Language and Literature (or Hebrew), with History. Every candidate must pass in four of these, namely:—Classics and Mixed Mathematics, which are obligatory, and any two of the remaining subjects, at his option. The subjects for 1880 are as follows:—

1. *Classics.*—Greek.—Thucydides, Book VII.
Sophocles.—Electra.
Latin.—Tacitus.—Annals, Book I.
Juvenal.—Satires VIII. and X.
Latin Prose Composition.
General Paper in Grammar and History.

2. *Mathematics.*—Mechanics.
Hydrostatics.
Optics.
Astronomy.
} As treated in Galbraith and Haughton's Manuals.

[Except in the case of Exemptions to Professional Students as stated in § V.]

3. *Mental and Moral Philosophy.*—Murray's Outline of Hamilton's Philosophy; Calderwood's Handbook of Moral Philosophy.

4. *Natural Science.*—Geology and Mineralogy, as in Dana's Geology and Manual of Mineralogy.—The Zoology, Botany and Chemistry necessary to the study of the books above named; or as in Dawson's Handbook of Zoology; Gray's Structural and Systematic Botany, and Wilson's Inorganic Chemistry.

5. *Experimental Physics.—Electricity.*—Statical and Dynamical:—including Electro-Magnetism—Magneto-Electricity — Thermo-Electricity—Diamagnetism—Electric Measurements—Practical Application to Telegraph, &c. *Magnetism. Sound.*—Theory of Undulations.—Production and Propagation of Sound—Vibrations of Strings, Rods, and Plates.—Vibrations of Fluids.—Musical Sounds.

6. *History and English.*—viz., (*a*) *English Language.*—Marsh's Hand-Book; or Chaucer, Prologue to Canterbury Tales, with Early English Grammar. (Clarendon Press Series, ed. Morris).
(*b*) *English Literature.*—Shakespeare—Hamlet. (Clarendon Press Series, ed. Clark and Wright). Hallam's Literary History of Europe—the parts relating to English Literature.
(*c*) *History.*—Green's Short History of the English people.

Or instead of History and English, candidates may take one of the following:—

(a) *History and French.*—History as above. The course of French for the Fourth Year.—Boileau, Art poétique; Corneille, Horace; Translation into French, and French Composition.

(b) *History and German.*—History as above. Schiller, Geschichte des 30 jährigen Krieges ; Goethe, Iphigenie auf Tauris ; General paper on Grammar ; Translation into German, and German Prose Composition.

(c) *History and Hebrew.*—(Theological Students only.) History as above. Hebrew Grammar ; Translation from first four chapters of Isaiah ; any three of the Psalms ; the Chaldaic portions of the Scriptures ; Targum of Onkelos on Genesis, Chap. I. : Modern Hebrew Poetry, Halevi or Gabirol.

II. FOR THE DEGREE OF M.A.

Bachelors in Arts, of at least three years' standing, are entitled to the degree of Master of Arts after such examination and exercises as may be prescribed by the Corporation. The Regulation at present is that the Candidate shall prepare a Thesis on some literary, scientific, or professional subject, approved by the Faculty. Such Thesis shall be reported on by the Faculty to the Corporation before the granting of the Degree.

[*Changes in the Regulations for this Degree are under consideration. They may possibly be inserted in an Appendix.*]

---

§ V. SPECIAL PROVISIONS FOR CANDIDATES FOR HONOURS AND FOR PROFESSIONAL STUDENTS.

I. Candidates for Honours in the Third Year.

Candidates for Honours who, at the Sessional Examination of the Second Year, have passed in the First Class in the subjects in which they purpose to compete for Honours, and not below Second Class in the others, may, on application to the Faculty, be allowed the following exemptions :—

They may in the Lectures and Examinations of the Third Year omit any one of the following subjects, provided it is not immediately connected with that in which they study for Honours :—(1) Greek. (2) Latin. (3) Optics. (4) Rhetoric. (5) Moral Philosophy. (6) Experimental Physics. (7) Zoology.

The particular exemption desired must be stated to the Faculty in the application of the candidate, and no change can be made subsequently.

For the purpose of the above Regulations, the subjects of the Second Year in which Honours are given in the Third Year are classified under the following heads :

1. Classics. 2. Mathematics and Physics. 3. Logic, Moral and Mental Philosophy. 4. Natural Science. 5. English.

The candidate must pursue the Honour course selected to the satisfaction of the Professor, and must pass the Examination therein.

The above exemptions shall be granted only with reference to Honour subjects in which regular courses of Lectures are delivered in the Third Year.

II. Candidates for B.A. Honours.

Students who have attained Honours at the end of the Third Year in any subject, and wish to be candidates for B.A. Honours in the same subject, are entitled to exemptions if they have been placed in the 1st or 2nd Class in any two of the four subjects required for the Final Examination. The Regulations concerning these exemptions are as follows :—

[1] EXAMINATIONS.—They may claim to have the Third Year Examination in the two subjects referred to regarded as a B.A. Examination in the same.

[This amounts to exemption at the ordinary B.A. Examination from two of the four subjects required above.]

[2] LECTURES.—They are required to attend the Ordinary Lectures of the Fourth Year [for which see § I and Time Table] in three subjects only. Two of these must be the subjects in which they are to pass the ordinary B.A. Examination, if Lectures are delivered in them ; if not, the choice is left to the Candidate.

[N.B. Candidates are required to pass the Christmas Examination in the subjects in which they attend the ordinary Lectures.]

III. Law and Medical Students.

1. Students of the Third and Fourth Years, matriculated in the Faculties of Law or Medicine of the University, are entitled to the following exemptions :—

In the Third Year they may omit the Lectures and Examinations in Optics and in any one of the following subjects :—Zoology, Experimental Physics, or Rhetoric and English Literature.

In the Lectures of the Fourth year they may omit Greek and Astronomy and also Geology or Experimental Physics. At the Christmas Examination of the Fourth year they may omit Astronomy and Optics.

In the Ordinary B.A. Examinations they may, in Classics, pass in Latin alone ; and in Mixed Mathematics, in Mechanics and Hydrostatics alone.

To be allowed these privileges in either year, they must give notice at the commencement of the Session, to the Dean of the Faculty, of their intention to claim exemptions as Professional Students, and must produce at the end of the Session certificates of attendance on a full course of Professional Lectures during the year for which the exemptions are claimed.

IV. Students in Faculty of Applied Science.

Students in Arts who have passed the Intermediate Examination and been placed therein not lower than the Second Class in Mathematics have the privilege of entering the Second Year in Applied Science, and will be exempted from the Mental and Moral Philosophy and the Greek of the Third and Fourth Years in Arts while proceeding regularly in the course for B. Ap. Sc.

V. Students of Affiliated Theological Colleges.

1. Such Students, whether entered as Matriculated or Occasional, are subject to the regulations of the Faculty of Arts in the same manner as other students.

2. The Faculty will make formal reports to the Governing body of the Theological College to which any such Students may belong, as to :—[1] their conduct and attendance on the classes of the Faculty ; and [2] their standing in the several examinations; such reports to be furnished after the Christmas and Sessional Examinations severally, if called for.

3. Matriculated Students are allowed no exemptions in the course for the degree of B.A. till they have passed the Intermediate Examination ; but they may take Hebrew in the First and Second years, instead of French or German.

4. In the Third and Fourth years they are allowed exemptions as follows :—

In the Third year they may omit Optics and Rhetoric, and English Literature with Experimental Physics or Zoology.

In the Fourth year they may omit Astronomy and Optics and English Literature, with Experimental Physics or Geology.

5. Certificates of attendance on the full course of lectures in the Theological College, during the year for which the exemptions are claimed, must be produced by Students who avail themselves of these exemptions, before presenting themselves for Examination.

[No Student will be allowed in the same Session both Professional and Honour exemptions. Students are cautioned against difficulties that may arise from any change such as taking Professional Exemptions in the Third Year, and Honour Exemptions in the Fourth, or vice versâ, *e.g.*, a Professional Student who has not taken up "Optics" in the Third Year, may be required by the Regulations to take it up in the Fourth if he does not claim Professional Exemptions in that year.]

§ VI. MEDALS, HONOURS, PRIZES AND CLASSING.

1. GOLD MEDALS will be awarded in the B.A. Honour Examinations to Students who take the highest Honours of the First Rank in the subjects stated below, and who shall have passed creditably the Ordinary Examinations for the Degree of B.A. :

The *Henry Chapman Gold Medal*, for the Classical Languages and Literature.
The *Prince of Wales Gold Medal*, for Logic and Mental and Moral Philosophy.
The *Anne Molson Gold Medal*, for Mathematics and Natural Philosophy.
The *Shakespere Gold Medal*, for the English Language, Literature and History.
The *Logan Gold Medal*, for Geology and other Natural Sciences.

In the event of there being no Candidate for any Medal, or of none of the Candidates fulfilling the required conditions, the Medal will be withheld, and the proceeds of its endowment for the year may be devoted to prizes in the subjects for which the Medal was intended. For details, see announcements of the several subjects below.

2. HONOURS, of First or Second Rank, will be awarded to those Matriculated Students who have successfully passed the Examinations in any Honour Course established by the Faculty, and have also passed creditably the ordinary Examinations in all the subjects proper to their year.

By a recent Order of the Lieutenant-Governor of Ontario in Conncil, Honours in this University confer the same privileges in Ontario as Honours in the Universities of that Province, as regards certificates of eligibility for the duties of Public School Inspectors, and as regards exemption from the non-professional Examination of Teachers for First-Class Certificates for Grades "A" and "B."

3. SPECIAL CERTIFICATES will be given to those candidates for B.A. who shall have been placed in the First Class at the ordinary B.A. Examination.

4. CERTIFICATES of High General Standing will be granted to those Matriculated Students, who are placed in the First Class in the aggregate of the Studies proper to their year.

5. PRIZES OR CERTIFICATES to those Matriculated Students who may have distinguished themselves in the studies of a particular class, and have attended all the other classes proper to their year.

6. His Excellency the Marquis of Lorne has been pleased to offer a Gold Medal in the Faculty of Arts, yearly during his term of office, for the encouragement of the study of Modern Languages and Literature with History.

LORNE GOLD MEDAL.—The Regulations are as follows:

1. The Subjects for competition shall be French and either German or Spanish, together with the History part of the present Honour Course for the Shakespeare Medal.

2. The course of study shall extend over two years, viz., the Third and Fourth Years.

3. The successful Candidate must be capable of speaking and writing both languages correctly.

4. There shall be examinations in the subjects of the course in both the Third and Fourth Years, at which Honours may be awarded to deserving Candidates.

5. The general conditions of competition, and the privileges as regards exemptions, shall be the same as for the other Gold Medals in the Faculty of Arts.

6. Students from other Faculties shall be allowed to compete, provided they pass the examinations of the Third and Fourth Years in the above subjects.

7. The subjects of Examination shall be as follows:

I. FRENCH.—*Third Year.*

Racine,—Phèdre; Les Plaideurs.
Boileau,—L'Art Poétique.
Pascal,—Les Pensées.
La Bruyère,—Les Caractères.
Ampère,—Formation de la Langue française.
In addition to the ordinary course as stated in the Calendar.

Fourth Year.

Molière,—Le Misanthrope.
Corneille,—Cinna.
La Rochefoucauld,—Les Maximes.
Montaigne,—Les Essais.
Bonnefon,—Les Auteurs contemporains.
Auguste Brachet,—Grammaire historique.
In addition to the ordinary Course as stated in the Calendar.

II. GERMAN.—*Third Year.*

Advanced Grammar,—(Whitney).
Schiller,—Wilhelm Tell.
Herder,—Der Cid.
Wieland,—Geschichte der Abderiten.
Schleicher,—Die Deutsche Sprache (History of the German Language).
History of German Literature from 1750, being a Critical Review of the Principal Writers of the Classical Period;—The Men of 'Sturm und Drang'—The Romantic Schools—Modern Lyric Poets—(Gostwick and Harrison's Outlines).
Translation into German (Selections from English Prose writers).
Composition.

Fourth Year.

Advanced Grammar,—(Whitney).
A special study of Goethe's 'Faust' (Part I.) and 'Iphigenie auf Tauris.
Selections from Heine's Lyrical Poems.
Schiller,—Geschichte des dreissigjahrigen Krieges.
Schleicher,—Die Deutsche Sprache.
German Literature from 1150 to 1350.—Mediæval Classic writers—Epic, Lyric and Didactic Poetry—(Kurz, Leitfaden zur Geschichte der Deutschen Literatur).
Translation from English writers.
Composition.

III. SPANISH.—*Third Year.*

Grammar and Composition, Rabadan's Advanced Course.
Selection from the Novelas Exemplares of Cervantes.
Poesias Selectas de Lope de Vega.
History of Spanish Language and Literature, Ticknor and Bouterwek. First period; from end of the twelfth century to the beginning of the sixteenth.

Fourth Year.

Composition.
Translation from English into Spanish.
Latter portion of Rabadan's Advanced Course.
Calderon's La Vida es sueno, and Il Alcalde de Zalamea.
History of Spanish Literature, Luis de Leon, Cervantes, Lyric Poetry, Ballad Poetry, Romancero del Cid, School of Salamanca.

IV. HISTORY.—(*See Calendar, pages* 42 *and* 43.)

For the Competition in April, 1880, the Course will be only that for the Fourth Year as given above. In future years, the Competitive Examination will include the work of both the Third and Fourth Years.

7. THE NEIL STEWART PRIZE of $20 is open to all Undergraduates of this, and also to Graduates of this or any other University, studying Theology in any College affiliated to this University, under the following rules:

1. The prize will not be given for less than a thorough examination in Hebrew Grammar, passed in the First Class, in reading and translating the Pentateuch and such poetic portions of the Scripture as may be determined.

2. In case competitors should fail to attain the above standard, the prize will be withheld, and a prize of Forty Dollars will be offered in the following year for the same.

[Course for the present year:—Hebrew Grammar (Gesenius); Translation and analysis of the first ten chapters of Genesis; the prophet Habakkuk (the whole book); and the first five Psalms.]

3. There will be two Examinations of three hours each ; one in Grammar and the other in Translation and Analysis.

This Prize, founded by the late Rev. C. C. Stewart, M.A., and terminated by his death, has been re-established by the liberality of Neil Stewart, Esq., of Vankleek Hill, and will be offered for competition next Session.

8. (*a*). EARLY ENGLISH TEXT SOCIETY'S PRIZE.—This prize, the annual gift of the Early English Text Society, will be awarded for proficiency in (1) Anglo-Saxon, (2) Early English before Chaucer.

The subjects of Examination will be :

(1) *The lectures of the Third and Fourth Years on Anglo-Saxon.*

(2) *Specimens of Early English* (*Clarendon press Series, ed. Morris and Skeat*), *Part II. A.D.* 1298—*A.D.* 1393. *The lay of Havelok the Dane* (*Early English Text Society, ed. Skeat*).

(*b*). NEW SHAKESPEARE SOCIETY'S PRIZE. This prize, the annual gift of the New Shakespeare Society, will be awarded for a critical knowledge of the following plays of Shakespeare :

Hamlet ; Macbeth ; Othello ; King Lear.

9. The names of those who have taken Honours, Certificates, or Prizes, will be published in order of merit ; with mention, in the case of Students of the First and Second Years, of the schools, in which their preliminary education has been received.

---

§ VII. LICENSED BOARDING-HOUSES.

(*Regulations for Students in Arts, passed by Corporation, April*, 1875.)

1. All Students under 21 years of age, not residing with parents or guardians, nor belonging to a Theological College, shall reside in licensed boarding-houses, unless they produce written authority from parents or guardians to reside elsewhere.

2. Persons applying for a license to keep a boarding-house shall produce evidence satisfactory to the Principal as to their character and fitness, and the suitability of the house for the health and comfort of the students. They shall also supply him with a statement of charges.

3. The keeper of the boarding-house shall report immediately to the Principal the entrance or departure of any Student, and any instance of immorality or disorderly conduct.

§ VIII. ATTENDANCE AND CONDUCT.

All Students shall be subject to the following regulations for attendance and conduct:

1. A Class-book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said Class-book shall be submitted to the Faculty at all their ordinary meetings during the Session.

2. Each Professor shall call the roll immediately at the beginning of a lecture. Credit for attendance on any lecture may be refused on the grounds of lateness, inattention or neglect of study, or disorderly conduct in the Class-room. In the case last mentioned, the student may, at the discretion of the Professor, be required to leave the Class-room. Persistence in any of the above offences against discipline, after admonition by the Professor, shall be reported to the Dean of Faculty. The Dean may, at his discretion, reprimand the student, or refer the matter to the Faculty at its next meeting, and may in the interval suspend from Classes.

3. Absence from any number of lectures can only be excused by necessity or duty, of which proof must be given, when called for, to the Faculty. The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session, shall in each case be determined by the Faculty.

4. While in the College, or going to or from it, Students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the College buildings or grounds, may admonish the Student, and if necessary report him to the Dean.

5. Every Student is required to attend regularly the religious services of the denomination to which he belongs, and to maintain, without, as well as within the walls of the College a good moral character.

6. When Students are brought before the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, impose fines, disqualify from competing for prizes and honours, suspend from Classes, or report to the Corporation for expulsion.

7. Any Student who does not report his residence, on or before Nov. 1st in each year, is liable to a fine of one dollar.

8. Any Student injuring the furniture or buildings will be required to repair the same at his own expense, and will, in addition, be subject to such other penalty as the Faculty may see fit to inflict.

9. All cases of discipline involving the interest of more than one Faculty, or of the University in general, shall be immediately reported to the Principal, or in his absence, to the Vice-Principal.

---

§ IX. LIBRARY AND MUSEUM.

1. The books in the Library consist of two divisions:—1st, those which may be lent; and, 2nd, those designated by the general term "Books of Reference," which may not, under any circumstances, be removed from the Library.

2. A Student may borrow books from the Library on depositing the sum of four dollars with the Librarian, and s gning a receipt for the books ; such deposit to be returned to the Student on his return ng the books uninjured.

[NOTE.—This rule applies also to Students in Law and Medicine who have paid the Library Fee to the Secretary. They are required to present their Matriculation Tickets to the Secretary and to the Librarian.]

3. Students may borrow not more than three volumes at one time, except on special recommendation of a Professor, and must return them within two weeks, on penalty of a fine of 20 cts. for the first week of detention, and 50 cts. for each subsequent week.

4. A Student incurring a fine will be debarred the use of the Library until the fine has been paid.

5. Any volume or volumes lost or damaged by a student shall be paid for by him, at such rates as the Faculty may direct, having reference to the value of the book and of the set to which it may belong.

6. Students may read in the Library at such hours as may be determined by the Faculty.

7. Professors and Lecturers may borrow any books required by them for their duties in the College, not exceeding ten volumes at any one time. Books so borrowed must be returned at or before the end of each Session.

8. Graduates in any of the Faculties, on making a deposit of four dollars, are entitled to the use of the Library, subject to the same rules and conditions as students, but they are not required to pay the Annual Library Fee.

9. Members of the McGill College Book Club are, by a regulation of Corporation, entitled to the use of the Library on the same conditions as Graduates.

10. Persons not connected with the College may consult books in the Library, on obtaining an order from any of the Governors, or from the Principal, the Dean of the Faculty, or any of the Professors ; and donors of books or money to the amount of Fifty Dollars may at any time consult books on application to the Librarian.

11. The Library will be open from 10 a.m to 4 p.m., daily, except Saturdays. On Saturdays it will be open from 10 a.m. to 1 p.m.

12. No one is allowed to enter the alcoves or to take down books from the shelves, except the Governors, Members of Corporation, Professors, the Librarian and his assistants, or those whom any of the above may accompany personally.

13. A person desiring to read or to borrow a book, which he has ascertained from the Catalogue to be in the Library, will fill up one of the blank forms provided for Readers and Borrowers respectively, and hand it to the Librarian, who will thereupon procure him the book.

14. Readers must return the books they have obtained to the Librarian, before leaving the Library.

15. No conversation that can disturb Readers is permitted in the Library.

16. The time and conditions of study in the Museum will be arranged by the Professor of Natural History.

§ X. FEES.

Matriculation Fee for the First Year (to be paid in the Year of Entrance only), ... $4 00

For the Second Year (exigible from students who enter in the Second Year, and also from those who have failed in the First Year and re-enter in the Second Year on Examination), ... 6 00

Sessional Fee, ... 20 00

Library Fee, ... 4 00

Gymnasium Fee, ... 2 50

Undergraduates and Students in Special Courses are required to pay all the above Fees.

Partial Students, viz., those taking three or more Courses of Lectures are required to pay the Matriculation, Library and Gymnasium Fees, and $5 for each Class which they attend, or $20 for all the courses.

Occasional Students taking one course of Lectures only, are required to pay $5 per Session for that course.

Occasional Students taking two courses of Lectures are required to pay the Library Fee and $5 for each course.

The Matriculation, Library, and Gymnasium Fees are exigible from Students holding exemptions from Sessional Fees.

Graduates in Arts are allowed to attend without payment of fees, all lecture s except those noted as requiring a special fee.

The fees must be paid to the Secretary and the tickets shown to the Vice-Dean within a fortnight after the commencement of attendance in eaeh session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

[All fines (see also 7, § VIII.) are applied to the purchase of books for the Library.]

Fee for the Degree of B.A. $5 00

" " " *M.A.* 10 00

If the Degree of M.A. be granted, with permission to the Candidate, on special grounds, to be absent from Convocation, the fee is..... $25.00

The B.A. fee must be paid before the Examination.

The M.A. fee must be sent to the Secretary of the University at the same time that the Candidate sends his Thesis to the Dean of the Faculty. This is a condition essential to the reception of his application.

§ XI. COURSES OF LECTURES.

I. ORDINARY COURSE.

1. CLASSICAL LITERATURE AND HISTORY.

Professor, Rev. G. CORNISH, M.A., LL.D.

GREEK.

First Year.—HOMER.—ODYSSEY, Book XI.
XENOPHON.—HELLENICS, Book II.
Greek Prose Composition.

Second Year.—LYSIAS.—IN ERATOSTHENEM.
EURIPIDES.—MEDEA.

Third Year.—DEMOSTHENES.—THE OLYNTHIACS.
SOPHOCLES.—THE ELECTRA.

Fourth Year.—THUCYDIDES.—Book VII.

LATIN.

First Year.—VIRGIL.—ÆNEID, BOOK VI.
CICERO.—EPISTOLAE SELECTAE.
Latin Prose Composition.

Second Year.—HORACE.—EPISTLES, BOOK I.
PLINY.—EPISTOLAE SELECTAE.
Latin Prose Composition.

Third Year.—JUVENAL.—SATIRES VIII. and X.
PLAUTUS.—AULULARIA.
Latin Prose Composition.

Fourth Year.—TACITUS.—ANNALS, BOOK I.
Latin Prose Composition.

In the work of the Class the attention of the Student is directed to the collateral subjects of History, Antiquities and Geography; also to the grammatical structure and affinities of the Greek and Latin Languages; and to Prosody and Accentuation.

---

2. ENGLISH LANGUAGE AND LITERATURE.

(MOLSON PROFESSORSHIP.)

Professor, VEN. ARCHDEACON LEACH, D.C.L., LL.D.

Associate-Professor, CHAS. E. MOYSE, B.A.

First Year.—English Language and Literature.—Text-books—Bain's English Grammar; Spalding's History of English Literature.

Second Year.—A detailed course on some period of English Literature.

Third Year.—Rhetoric.—Text-book—Whately's Rhetoric, I., II., III.

Fourth Year.—A course on the following special subjects:
Chaucer, The Prologue to the Canterbury Tales; Shakespeare, Hamlet.

3. HISTORY.

Professor, CHAS. E. MOYSE, B.A.

The Professor of History will deliver a course of lectures on some period of Modern History, of which due notice will be given.

---

4. LOGIC, MENTAL AND MORAL PHILOSOPHY.

(JOHN FROTHINGHAM PROFESSORSHIP OF MENTAL AND MORAL PHILOSOPHY.)

Professor, REV. J. CLARK MURRAY, LL.D.

Second Year.—ELEMENTARY PSYCHOLOGY.—Text-Book—Bain's Mental Science.
LOGIC—Text-Book—Jevons' Elementary lessons in Logic.

Third Year.—MORAL PHILOSOPHY.—Text-Book—Calderwood's Handbook of Moral Philosophy.

Fourth Year.—MENTAL PHILOSOPHY.—Text-Book—Murray's Outline of Hamilton's Philosophy.

---

5. FRENCH LANGUAGE AND LITERATURE.

Professor, P. J. DAREY, M.A., B.C.L.

First Year.—DE FIVAS, Grammaire des Grammaires.
LA FONTAINE, les Fables, livres III et IV.
MOLIERE, le Bourgeois gentilhomme.
Dictation. Colloquial exercises.

Second Year.—DE FIVAS, Grammaire des Grammaires.
MOLIERE, l'Avare.—RACINE, Britannicus.
Translation into French :—DR. JOHNSON, Rasselas.
Les Ecrivains célèbres de la France :—Bonnefon.
Dictation. Parsing. Colloquial exercises.

Third Year.—POITEVIN, Grammaire élémentaire.
PONSARD, l'Honneur et l'Argent.
CORNEILLE, le Cid.
Translation into French :—GOLDSMITH, Vicar of Wakefield.
French Composition. Dictation.
Les Ecrivains modernes de la France :—Bonnefon.

Fourth Year.—BARRIERE et CAPENDU, les Faux bons hommes.
EMILE SOUVESTRE, Un Philosophe sous les toits.
Lectures on French Literature.
Translation into French :—Shakspere, "As you like it."
French Composition. Dictation.

The Lectures in the Third and Fourth Years are given in French.

6. GERMAN LANGUAGE AND LITERATURE.

Professor, C. F. A. MARKGRAF, M.A.

First Year.—This Course comprises Grammar, Reading and Translations oral and written. Text-Books :—Schmidt's German Guide (1st and part of 2nd Course) ; Adler's Progressive German Reader (Selections from Sections 1, 2 and 3).

Second and Third Years.—Text-Books :—Schmidt's German Guide (2nd and 3rd Course) ; Otto's Conversation Grammar (excerpts) ; Adler's Reader (Selections from Sections 4 and 5).—German Plays (the authors to be made known at the commencement of the Session) ; History of German Literature from the earliest periods to the close of the 18th cen... (A Brief Survey, by C.F.A.M.) —Exercises in Parsing ; Translations from English writers ; German Composition (in the Third Year).

---

7. HEBREW AND ORIENTAL LITERATURE.

Professor, REV. A. DE SOLA, LL.D.

Elementary Course.—(For Students of the First and Second Years.)—Grammar ; —Text-Book, Gesenius' Hebrew Grammar, with exercises in orthography and etymology ; Reading ; Translation and Grammatical Analysis of Historical portions of the Scriptures—Syntax—Mishlé Shualim—Fables, &c.

Advanced Course.—(For Students of the Second, Third and Fourth Years.)—Introduction to the study of Hebrew Poetry—its spirit and characteristics. Lowth and Sarchi as Text-Books. Translation from the Psalms, Lamentations and Isaiah. Ancient compared with Modern Hebrew Poetry ; the productions of Halevi, Gabirol, &c., Grammar, Exercises, &c., continued.

The Chaldee Language :—Grammar, *Mebo Halashon Aramith* of J. Jeitteles. The Chaldee portions of Scripture. Targum of Onkelos and T. Yerushalmi.

The Syriac Language :—Grammar (Uhlemann's) and Translation.

The course comprises Lectures on the above Languages and their Literature in particular, with a general notice of the other Oriental Languages, their genius and peculiarities. Comparative Philology, affinity of roots, &c., also receive due attention, while the portions selected for translation will be illustrated and explained by reference to Oriental manners, customs, history, &c.

---

8. SPANISH LANGUAGE AND LITERATURE.

Rev. Professor DE SOLA.

(Extra Fee for this Class, $5.00.)

The study of the Spanish Language on this continent, being generally pursued with special reference to commercial purposes, it will be sought to

impart in this course a practical knowledge of the Castilian—the richest and most harmonious of the Peninsular languages—as well as an acquaintance with its Literature.

Ollendorf's Spanish Grammar by Velazquez and Simmoné, and the Reader of Velazquez, are the Text-Books employed in the Junior Class, who will also be exercised in Composition by both written and oral exercises. In the Senior Class, Fernandes' Exercises, continuation of Grammar and Composition, Cervantes' Don Quixote, Quintana, Vida del Cid, and Mariana's Historia will be the subjects of study. Besides a special comparison with the Portuguese Language, a general notice, literary and historical, of the Bascuence and other dialects will be given.

---

9. MATHEMATICS AND NATURAL PHILOSOPHY.

(PETER REDPATH PROFESSORSHIP OF NATURAL PHILOSOPHY.)

Professor, ALEXANDER JOHNSON, M.A., LL.D.

(In the work of the First and Second Years, assistance will be given by G.H. Chandler, B.A., Lecturer in Mathematics in the Faculty of Applied Science.)

MATHEMATICS.—*(First Year)*—Arithmetic.—Euclid, Books 1, 2, 3, 4, 6, with Definitions of Book 5 (omitting propositions 27, 28, 29, of Book 6), Todhunter's Edition.—Todhunter's Algebra for Beginners, to end of Quadratic Equations with one unknown quantity.—Galbraith and Haughton's Plane Trigonometry to beginning of solution of Plane Triangles.

MATHEMATICS.—*(Second Year)*—Arithmetic, Euclid, Algebra, and Trigonometry as before.—Nature and use of Logarithms.—Remainder of Galbraith and Haughton's Plane Trigonometry.—Elements of Solid Geometry, including the mensuration of Surfaces and Solids. Geometrical Conic Sections :—the Parabola with the fundamental properties of the Ellipse and Hyperbola. Text-book :—Wilson's Solid Geometry and Conic Sections, pp. 1-60 and 93-118.

The course for the Intermediate University Examination consists of the Mathematics for the first two years except Conic Sections and Solid Geometry.

MATHEMATICAL PHYSICS.—*(Third Year)*—Galbraith and Haughton's Mechanics (omitting chap 5 of Statics), Hydrostatics, Optics.

ASTRONOMY.—*(Fourth Year)*—Galbraith and Haughton's Astronomy—The lectures on this subject will be given before Christmas.

EXPERIMENTAL PHYSICS.—*(Third and Fourth Years)*.—1.—*Light.*—Theories.—Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarisation. 2.—*Heat.*—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat. 3.—*Electricity.*—Statical and Dynamical :—including Electro-Magnetism—Magneto-Electricity—Thermo-Electricity—Diamagnetism—Electric Measurements—Practical Application to Telegraph, &c. 4.—*Magnetism.*

5.—*Sound.*—Theory of Undulations.—Production and Propagation of Sound—Vibrations of Strings, Rods, and Plates.—Vibrations of Fluids.—Musical Sounds. Text-Books :—Ganot's Treatise translated by Atkinson, and Tyndallon Heat and Sound. This Course extends over two years.

The Subjects for the Session 1880–81 are Electricity, Magnetism, and Sound.

The Lectures in Mathematical and Experimental Physics will be illustrated by Apparatus, of which the College has a very good collection.

---

10. GEOLOGY AND NATURAL HISTORY.

(Logan Professorship of Geology.)

Professor, J. W. Dawson, LL.D., F.R.S., F.G.S.

B. J. Harrington, B.A., Ph. D., Assistant Professor of Geology.

I. Biological Course.

Botany.—*(Second Year.)*—Vegetable Histology and Organography. Nutrition and Reproduction of Plants. Classification. Descriptive Botany. Flora of Canada. Palæobotany and Geographical Botany.

Text-Book.—Gray's Structural and Systematic Botany.

[A prize of $20 will be given by the Professor for the best collection of plants and the greatest proficiency in their determination. The prize collections or duplicates of them to remain in the College Museum. Candidates must be students in Botany of the previous session.]

Zoology and Palæontology. *(Third Year)*—Elements of Animal Physiology. Classification of Animals. Characters of the Classes and Orders of Animals, with Recent and Fossil Examples.

Text-book.—Dawson's Hand-book of Zoology, with books of reference.

II. Geological Course.

Mineralogy and Geology. *Fourth Year.*

(1) *Mineralogy.*—Chemical and Physical characters of Minerals, including Crystallography, the methods of determining species, and Descriptive Mineralogy ; with special reference to those species most important in Geology, or useful in the Arts.

(2) *Lithology and Stratigraphy.*—Composition of Rocks and their structure on the small scale ; Classification of Rocks. Arrangement of Rocks on the large scale ; Stratification, Elevation and Disturbances, Denudation.

(3) *Chronological Geology and Palæontology.*—Data for determining the relative ages of Formations. Classification according to age. Fauna and Flora of the successive periods. Geology of British America.

Text-books.—Dana's Manuals of Mineralogy and Geology, with Lyell's Student's Elements.

The Lectures in Natural History will be accompanied with demonstrations in the Museum. Students in Natural History are also entitled to tickets of admission to the Museum of the Natural History Society of Montreal.

II. CHEMISTRY.

Lecturer, B. J. HARRINGTON, B.A., Ph. D.

First Year.—A Course of Lectures preparatory to the Course in Natural Science. The Lectures are illustrated by experiments, and treat of the elementary constitution of matter, the laws of Chemical Combination by weight and volume, the Atomic Theory, Chemical Formulæ and Equations, Chemical affinity, characteristics of Acids, Bases and Salts, Compound Radicals, the preparation and properties of the non-metallic and metallic elements and many of their compounds, &c. A few Lectures are also devoted to the consideration of some of the more important Organic Substances, including Starch, Sugar, Albumen, Alcohol, the Vegetable Acids. &c. During the Course attention is called, as far as possible, to the relations of Chemistry to the various manufacturing industries. The laboratory is supplied with the usual apparatus, including a balance by Becker & Sons, spectroscope by Duboscq, Oxy-hydrogen lamp and blowpipe, large gas-holders, &c.

Text-book.—Wilson's Inorganic Chemistry. In connection with the Lectures on Organic substances students may consult Roscoe's Elementary Chemistry or Fowne's Chemistry.

---

12. METEOROLOGY.

Superintendent of Observatory, C. H. MCLEOD, Ma.E.

Instruction in Meteorological Observations will be given in the Observatory, at hours to suit the convenience of the senior students.

Certificates will be granted to those students who pass a satisfactory examination on the construction and use of Meteorological Instruments and on the general facts of Meteorology.

---

13. ELOCUTION.

MR. JOHN ANDREW, Instructor.

Students are recommended by the Faculty to avail themselves of the Instructions of Mr. Andrew, who will make arrangements for evening classes to meet during the Session.

II. HONOUR COURSES.

I. CLASSICS.

B.A. HONOURS, BEING THE HONOUR COURSE FOR STUDENTS OF THE THIRD AND FOURTH YEARS.

Candidates for B.A. Honours in Classics will be examined in the following subjects :—

I. GREEK.

Plato.—Republic, Books I. and II.
Aristotle.—The Poetics.
Herodotus.—Books VIII. and IX.
Thucydides.—Books VI. and VII.
Xenophon.—Hellenics, Books I. and II.
Homer.—Odyssey, Books I., II. and III.
Hesiod.—Works and Days.
Æschylus.—Prometheus Vinctus.
" Seven against Thebes.
Sophocles.—Antigone.
Euripides.—Hippolytus.
Aristophanes.—The Frogs.
Pindar.—Olympic Odes.
Theocritus.—Idylls I. to VI.
Demosthenes.—De Corona.
Æschines.—Contra Ctesiphontem.

II. LATIN.

Livy.—Books XXI., XXII. and XXIII.
Tacitus.—Annals, Books I. and II.
" Histories, Book I.
Virgil.—Æneid, Books I. to IV.
Plautus.—Aulularia.
Terence.—Adelphi
Horace.—Satires, Book I.
Juvenal.—Satt. VIII. and X.
Persius.—Satt. V. and VI.
Cicero.—De Imperio Cn. Pompeii.
" De Officiis.

III. HISTORY OF GREECE AND ROME.

Text-books :—

1. Grote's History of Greece.
2. Arnold's History of Rome.
3. Mommsen's History of Rome.
4. Cruttwell's History of Roman Literature.
5. Cruttwell and Banton's Specimens of Roman Literature.
6. Donaldson's Theatre of the Greeks.

IV. COMPOSITION.

1. Composition in Greek and Latin Prose.
2. General paper on Grammar, History and Antiquities.

The Examination for B.A. Honours will extend over four days, in the morning from 9 to 12, and the afternoon from 2 to 5.

2. LOGIC, MORAL PHILOSOPHY, AND MENTAL PHILOSOPHY.

The Honour Course in this department extends over the Third and Fourth Years. The Lectures of the Third Year review the Ancient Greek Philosophy, while those of the Fourth Year discuss the chief modern systems in connection with the existing tendencies of speculation.

In the Third Year, the Examination will be on the following works, in addition to the Lectures of that year :—

Schwegler's History of Philosophy, Chapters 1–21, inclusive.
Thomson's Outline of the Laws of Thought, Parts I., II., and III.

For B.A. Honours, the following works will form the subjects of Examintions, besides the Lectures of the Third and Fourth Years :—

Schwegler's History of Philosophy.
Thomson's Outline of the Laws of Thought, Parts I., II., and III.
Mill's Logic.
Kant's Critique of the Pure Reason.
Kant's Theory of Ethics (translated by T. K. Abbott).
Plato's Republic.

---

3. ENGLISH LANGUAGE, LITERATURE AND HISTORY.

The examination for Honours in the Third Year will be on the works in the following course :

Language.—Anglo-Saxon.—The lectures of the Third Year.
Early English.—Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II., extt. I-IX., inclusive.

Literature.—Chaucer.—The Prologue to the Canterbury Tales, The Knightes Tale, The Nonne Prestes Tale (Clarendon Press Series, ed. Morris).
Spenser.—The Faerie Queene, Book I.
Milton.—Shorter English Poems ; Areopagitica (ed. Arber).
Dryden.—Annus Mirabilis ; Hind and Panther ; Absalom and Achitophel.
Wordsworth.—Prelude (Moxon's edition).

History.—The lectures of the Ordinary course.
Hallam.—Middle Ages, caps. 1, 3, 5, 8, 9.
Macaulay.—Vol. I. cap. 1.

Lectures on the Honour Subjects of the Third Year.

Language.—Anglo-Saxon.—The essentials of the Anglo-Saxon Language and Literature. Text-book—Sweet's Anglo-Saxon Reader (Clarendon Press Series).

Literature.—A course on some of the special Honour subjects.

History.—Honour students are required to attend the Ordinary course of lectures on History.

B.A. HONOUR COURSE.

For B.A. Honours, the examination will be on the Literature of the Third Year Honour course and on the following subjects:

Language.—Anglo-Saxon—The lectures of the Fourth Year.
Early English—Specimens of Early English (Clarendon Press Series, ed. Morris and Skeat), Part II., extt. X-XX., inclusive.

Literature.—Shakespeare—Love's Labour's Lost, A Midsummer Night's Dream, Hamlet, The Tempest.
Ben Jonson—Every Man out of his Humour.
Sir Thomas More—Utopia (ed. Arber).
Pope—Essay on Criticism.
Cowper—The Task, Book II.
Keats—Hyperion.
Shelley—Cenci.
Tennyson—Idylls of the King.
Hallam—Literary History of Europe—the parts relating to English Literature.
Matthew Arnold—Essays in Criticism (the first two).

History.—The lectures of the Fourth Year.
Hallam—Constitutional History, caps. 1, 5 to 14 inclusive.
Macaulay—Vol. I., caps. 2 and 3.

Lectures on the Honour Subjects of the Fourth Year.

Language.—Anglo-Saxon—Sweet's Anglo-Saxon Reader and a portion of one of the longer Anglo-Saxon poems.

Literature.—A course on these special Honour subjects, viz:—the four prescribed plays of Shakespeare and Modern Poetry, with especial reference to Tennyson's Idylls of the King.

History.—Honour Students are required to attend the Ordinary Course of Lectures on History.

---

4. MATHEMATICS AND PHYSICS.

MATHEMATICS.—(*First Year.*)—McDowell's Exercises on Modern Geometry, &c.—Wood's Algebra—Todhunter's Theory of Equations.

MATHEMATICS.—(*Second Year.*)—Hind's Plane and Spherical Trigonometry.—Salmon's Conic Sections, chapters 1 to 7 and 9 to 13 inclusive.—Williamson's Differential and Integral Calculus (selected course).

MATHEMATICAL PHYSICS.—(*Third Year.*)—Minchin's Statics, (omitting Chapter 14)—Tait & Steele, Dynamics of a Particle.—Besant's Hydromechanics, Chaps. 1, 3, 3, 5.—Walton's Mechanical and Hydrostatical Problems.—Parkinson's Optics.—Main's Practical and Spherical Astronomy (selected course).

PURE MATHEMATICS.—Hind's Plane and Spherical Trigonometry.—Todhunter's Theory of Equations.—Williamson's Differential and Integral Calculus.—Boole's Differential Equations (selected course).—Salmon's Conic Sections.—Salmon's Geometry of three Dimensions (selected course).

MECHANICS.—Minchin's Statics.—Tait & Steele, Dynamics of a Particle—Routh's Dynamics of a Rigid Body.—Besant's Hydromechanics.—Walton's Mechanical Examples.—Walton's Examples in Hydrostatics.

ASTRONOMY.—Main's Astronomy.—Sir John Herschel's Outlines of Astronomy (Part II. The Lunar and Planetary Perturbations.)—Godfray's Lunar Theory, or Cheyne's Planetary Theory.

Newton's Principia, Lib. I., Sects. 1, 2, 3, 9, and 11.

LIGHT.—Lloyd's Wave Theory of Light

HEAT,
ELECTRICITY,
MAGNETISM,
ACOUSTICS,
} As in ordinary course.

The examinations for B.A. Honours will continue *four* days.

The examination for Honours in the other years will continue *two* days. Engineering students may be candidates for Honours.

5. NATURAL HISTORY AND GEOLOGY.

Third Year.—Mineralogy and the use of the Blowpipe. Lithology. Elementary course of Chronological Geology. Text-Books:—Dana's Mineralogy and Synopsis by the Professor.

Fourth Year.—The Lectures will include:

1. An advanced course in Lithology, General Geology and Palæontology, in connection with which the students will be required to read Dana's Geology and Lyell's Student's Elements.

2. Canadian Geology, in connection with which the students will read Reports of the Geological Survey of Canada, and Dawson's Acadian Geology.

3. Practical Exercises and instruction in the methods of Observation and of conducting Geological Explorations, and in the study of Palæontology. Text-books:—Von Cotta on Ore Deposits, Nicholson's Palæontology. Excursions for Field-work when practicable.

In addition to the above, the student is required to pass an examination in any one of the following subjects:

1. Canadian Botany, as in Gray's "Text-Book," and "Manual," and specimens illustrative of these books from the Museum.

2. Zoology and Palæontology of Canada, as in Dawson's Hand-book, and Billings' Palæozoic Fossils, with specimens from the Museum.

3. Mineralogy as in Dana, with specimens from the Museum.

Candidates for Honours will be expected to attain to such proficiency as to be able to undertake original investigations in some at least of the subjects of study. Students in the Faculty of Applied Science may be Candidates for Honours.

6. MODERN LANGUAGES WITH HISTORY.

See LORNE MEDAL Course.

§ XII. APPARATUS AND MUSEUM.

PHILOSOPHICAL APPARATUS.

LIGHT.—Besides a Foucault's Regulator for the Electric Light, an Oxyhydrogen Lamp, a Porte-lumière for Solar Light, and the usual instruments for the complete illustration of the phenomena of Reflection, Refraction, Dispersion, Achromatism, Vision, &c., the collection contains the means of illustrating Spectrum Analysis by projection on the screen; a Spectroscope, Duboscq's Projection apparatus for Double Refraction and Polarization, with a large collection of crystals; two Norremberg's Polariscopes, and apparatus for Interference. It has also Duboscq's Diffraction Bench and Apparatus, including the means of measuring the length of a wave of light by Babinet's method, Fresnel's Mirrors for Interference, a Biprism, &c. By means of this last collection photographs of diffraction phenomena have been taken in the College, which are projected on the screen for class illustrations.

ELECTRICITY.—For Electrical experiments there is a large plate-machine with the usual concomitants of Leyden jars, &c.; also a Holtz machine; a large Induction coil by Ruhmkorff with Foucault's contact-breaker, giving an eight inch spark; an Electro magnet of the largest size, with arrangements for experiments in Diamagnetism, and for the "Magnetization of light;" a Gaugain's Tangent Galvanometer with two circles, by Elliott Brothers, of London; a Thomson's Astatic Reflecting Galvanometer of high resistance with set of shunts, &c., by the same makers; other galvanometers; Wheatstone's Bridge and Wheatstone's Rheostat, &c., for Electrical measurements; Delezenne's circle to show induction by the earth's magnetism; Geissler's tubes, &c.

HEAT.—In the collection for Heat there are large silver-plated Reflectors, &c., apparatus to show formation of vapors in a vacuum and maximum tension; Thermopiles, with condensers; two different arrangements for exhibiting the phenomena of Calorescence, &c.

SOUND.—The collection for Sound, containing Organ-pipes and Bellows Tuning forks, Sonometer, Siren, Vibrating-plates, apparatus for singing-flames, &c., is almost wholly from Kœnig, of Paris. The most recent additions include:—The double Siren of Helmholtz, Lissajou's apparatus, Resonators, with arrangements for manometric flames; Quincke's apparatus for Interference, &c., Meldes' apparatus for the study of vibrating strings; Tisley's compound Pendulum apparatus and Edison's Phonograph.

MECHANICS AND HYDROSTATICS.—A good collection.

THE MUSEUM OF GEOLOGY AND NATURAL HISTORY.

The collections in Mineralogy and Geology, and part of those in Zoology, are arranged in the Central Hall of the Museum and the gallery surrounding it. The

Carpenter collection of Shells occupies a separate fire-proof room. The Botanical Collections occupy the west corridor, and the east corridor is used as a store-room and work-room. All the specimens are, as far as limited space will permit, so arranged and labelled as to be accessible and instructive to Students.

1. MINERALOGY.—The basis of this department is the collection of about 2000 Canadian and Foreign Minerals acquired from the late Dr. Holmes in 1857. Subsequent additions have largely increased this collection, which is now arranged in table cases with drawers beneath, the former containing a complete series of the more important minerals and a suite of crystallographic specimens for the use of students. In the wall-cases at one side of the hall are separate collections of economic minerals, and illustrations of concretionary and stalactitic structures, metamorphism, mineral veins, &c.

2. GEOLOGY AND PALÆONTOLOGY.—The collections consist of large series of Fossils representing the successive formations. A typical series for the use of students is arranged in chronological order in table cases around three sides of the hall, with special and local collections in the drawers below. On the walls and in the centre of the hall are large specimens, casts, &c. Among the more important special collections are those representing *Eozoon Canadense*, Devonian Plants and Post-pliocene Fossils, and the skeletons of English Mesozoic Reptiles presented by Mr. Claxton of Montreal. There are also a number of casts of large Fossils from the Ward collection and from the British Museum. A typical collection of rocks is arranged in two table cases.

3. ZOOLOGY.—In this department the Carpenter collection of Shells, presented by the late Dr. P. P. Carpenter, is a principal feature. The specimens are beautifully mounted on glass tablets, and arranged in six large table-cases and seven upright cases, and in drawers beneath the former. The collections of Radiates, Articulates and Vertebrates are temporarily placed in wall cases on one side of the hall and in the gallery above.

4. BOTANY.—The principal part of this collection is the Holmes Herbarium of Canadian and Foreign Plants, including the Grasses and Carices, which have been revised and named by Col. Munro. There is also a collection of specimens of Canadian woods, presented by the late Dr. Barnston, and by D. Davidson, Esq.; a collection of Australian woods, presented by Sir Wm. Dennison; collections of Foreign Ferns and British Plants, presented by G. Barnston, Esq., and collections of Mosses, Lichens, Fungi, and Algæ.

5. ETHNOLOGY.—In this department there are Indian Relics from the site of Hochelaga; the collection of the late Dr. Van Cortland of Ottawa, purchased from his heirs; and a small series of American Skulls.

[*Donations to the Museum are solicited; more especially of Canadian specimens of Fossils, Animals and Economic Mineralogy.*]

Lectures in the Undergraduate Course in the Faculty of Arts.

SESSION OF 1880-81.

FIRST YEAR.

HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
9	Classics.	* French.	* French.	* French.	Mathematics.
10	Mathematics.	Classics.	Classics.	Classics.	Classics.
11	English.	† Mathematics. (*c*)	English.	† Mathematics. (*c*)	English.
12	Elementary Chemistry.	* German: * Hebrew.	Mathematics.	* German: * Hebrew.	Elementary Chemistry.
1					

SECOND YEAR.

9	* French.	* German. (*d*)	* German.	English. (*b*)	* French. * German. (*d*)
10	Classics.	Botany.	Logic.	Botany.	* German. † Mathematics.
11	Logic.	Classics.	† Mathematics.	Classics.	Classics.
12	† Mathematics.	Mathematics.	* French.	Mathematics.	Logic.
1	* German.				

THIRD YEAR.

9	History.	Classics.	† Classics: † Math. Phy.	Classics.	†Classics: †English: †Geol.
10	German (*b*): †Math. Physics: † Mental Philosophy.	French, (*b*): †Men. Phil.	† Anglo-Saxon. Mathematical Physics.	French. (*b*)	Moral Philosophy.
11	Math Physics.	Zoology.	Moral Philosophy.	Zoology.	Mathematical Physics.
12	Moral Philosophy	§ Experimental Physics.	Rhetoric.	§ Experimental Physics.	† Mathematical Physics.
1		Hebrew. (*b*)		Hebrew. (*b*)	German. (*b*)

FOURTH YEAR.

9	† Geology.	Astronomy (*a*): German (*b*).	† Classics Geology.	Astronomy, (*a*): German (*b*).	† Geology, † Classics.
10	Geology	† M. Phy: French (*b*): †M. Ph.	English Literature.	† Math. Phys: †Mental Phil.	Geology.
11	Classics.	Mental Philosophy.	Classics.	Mental Philosophy.	French (*b*): † Anglo-Saxon and Early English.
12	† English.	§ Experimental Physics.	† Geology: † Math. Phys.	§ Experimental Physics. Hebrew. ( )	German. (*b*)

(*a*) During First Term. (*b*) Optional. (*c*) Except from Nov. 1st to Christmas. (*d*) For beginners entering 2nd Year. † For Candidates for Honours.
* The Student may take at his option French or German in the First two years, or, if a Theological Student, Hebrew. § From November 1st
Classes at 1 P.M. may be changed to other hours.

Library open every day except Saturday, 10 to 4: Saturday, 10 to 1. The Museum will be open as arranged by the Professor of Natural History.

Faculty of Applied Science.

THE PRINCIPAL *(ex-officio)*.

Professors:—GIRDWOOD.
HARRINGTON.
BOVEY.
Lecturers :—McLEOD.
CHANDLER.

Associate Professors :—LEACH.
DAWSON.
MARKGRAF.
JOHNSON.
DARBY.
MOYSE.

Dean of the Faculty :—HENRY T. BOVEY, M.A., C.E.

Librarian :—C. F. A. MARKGRAF, M.A.

The Courses of study in this Department are designed to afford a complete preliminary training of a Technical as well as a Theoretical nature, to such Students as are preparing to enter any of the various branches of the Professions of Engineering and Surveying, or are destined to be engaged in Assaying, Practical Chemistry, and the higher forms of Manufacturing Art.

Four distinct Courses of study are provided, each of which extends over four, or, under certain conditions, three years, and is specially adapted to the prospective pursuits of the Student:

(1) Civil Engineering.
(2) Mechanical Engineering.
(3) Mining Engineering.
(4) Practical Chemistry.

The Degrees conferred by the University upon such Undergraduates of this Department as shall fulfil the conditions and pass the Examination hereinafter stated, will be, in the first instance, "Bachelor of Applied Science," mention being made in the Diploma of the particular course of study pursued; and, subsequently, the degree of "Master of Engineering" on those who have pursued Courses 1, 2, or 3, and of "Master of Applied Science" on those who have pursued Course 4.

Examinations for Provincial Land Surveyors:—Any Graduate in the Faculty of Applied Science in the Course of Civil Engineering and Land Surveying may have his term of apprenticeship shortened to one year for the professions of Land Surveyor in Quebec or Ontario, or of Dominion Land Surveyor. He must, however, pass the preliminary and final examinations before one of the Boards of Examiners. The former examination should be passed before entrance into the Faculty, or during the First Second Year of attendance.

---

§ I. MATRICULATION AND ADMISSION.

1. Candidates for Matriculation must present themselves for examination on the 15th of September, 1880. They may, however, be admitted at a later period of the Session, upon special application, if qualified to take their places in the classes in progress.

FOR ENTRANCE INTO THE FIRST YEAR the subjects for examination will be:

Mathematics.—Arithmetic; Algebra, to end of Simple Equations; Euclid's Elements, Books I., II., III.

English.—Grammar (including Analysis), Composition and the leading facts of the History of England.

Candidates in the School Examinations of the University, who have passed in Geometry, Algebra and English, may be received as matriculated Students in the First Year.

2. *The full course will extend over a period of FOUR years, but Candidates may enter the SECOND year, and thus reduce the course to THREE years*, if competent to pass a satisfactory examination in the following subjects:

Arithmetic.

Algebra.—To the end of Quadratics.

Euclid.—Books I., II., III., IV., VI., and XI., and the definitions of Book V.

Plane Trigonometry,—including solution of Triangles.

Chemistry.—Inorganic, as in Wilson's Elements.

English.—Grammar (including Analysis), Composition and the leading facts of the History of England.

French or German.—(French as in De Fivas' Grammaire des Grammaires as far as Syntax, and easy translation. German as in Schmidt's German Guide, Part I., and easy translation.)

Candidates unable to pass in Chemistry, French, or German, may be allowed by the Faculty to enter and to take the First Year lectures on Chemistry and German.

§ II. MEDAL, EXHIBITIONS AND PRIZES.

1. The Lorne Silver Medal (the gift of His Excellency The Right Honourable the Marquis of Lorne).

The Lorne Medal is open for competition to *fourth* year Students of the three courses of Civil, Mechanical and Mining Engineering. Candidates must take a first-class general standing in their respective courses, and the Medal will be awarded to the Student who stands *first* in a competitive examination in the following subjects:

(*a*). Hydraulics. (*b*). Steam and Steam Engine. (*c*). Materials. (*d*). Mathematical Physics.

2. The Scott Exhibition (founded by the Caledonian Society of Montreal, in commemoration of the centenary of Sir Walter Scott).

An Exhibition of $66 on this endowment will be offered for competition at the opening of Session 1880-81 to Students entering the Fourth Year, and will be awarded to the Student who distinguishes himself the most in :—

(*a*). The Summer Report. (*b*). Macaulay's History of England, vol. I., cap. I.; Milton's "Areopagitica;" Sir Walter Scott's "Lady of the Lake." (*c*). Applied Mechanics.

1872,	Donald A. Stewart.	1877,	J. Swan.
1875,	W. J. Sproule.	1878,	J. S. O'Dwyer.
1876,	W. J. Sproule.	1879,	J. S. O'Dwyer.*

* W. T. Skaife, proxime accessit, Special Scott Prize.

3. An Exhibition of $50, presented by the Professor of Civil Engineering, will be offered for competition at the opening of the Session of 1880-81 to Students entering the Third Year, and will be awarded to the Student who distinguishes himself the most in :—

(a). The Summer Report. *(b).* Mechanism. *(c).* Mathematics. *(d).* Elasticity as relating to the strength of materials.

4. A prize of $20 will be offered for competition at the opening of the Session of 1880-81 to Students entering the Second Year, and will be awarded to the Student who distinguishes himself the most in :—

(a). The Summer Report. *(b).* A paper on the Mathematics of the First Year.

5. Prizes may be awarded to such Matriculated Students as shall have done satisfactory work during the Session, and have taken the first or second place in the aggregate standing in the Sessional Examinations.

§ III. COURSE OF STUDY FOR THE SESSION 1880-81.

FIRST YEAR.

CIVIL ENGINEERING.	MECHANICAL ENGINEERING.	MINING ENGINEERING.	PRACTICAL CHEMISTRY.
Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.	Arithmetic. Euclid.
Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.	Algebra. Trigonometry.
Geometrical Conics.	Geometrical Conics.	Geometrical Conics.	Geometrical Conics.
Solid Geometry.	Solid Geometry.	Solid Geometry.	Solid Geometry.
Descriptive Geometry. (Optional.)	Descriptive Geometry. (Optional).	Descriptive Geometry. (Optional).	Descriptive Geometry. (Optional).
Freehand Drawing.	Freehand Drawing.	Freehand Drawing.	Freehand Drawing.
Chemistry.	Chemistry.	Chemistry.	Chemistry.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.

SECOND YEAR.

Mechanism.	Mechanism.	Practical Chemistry.	Practical Chemistry.
Materials.	Materials.	Mechanism	
Surveying.	Surveying.	Surveying.	Geometrical Drawing.
Descriptive Geometry.	Descriptive Geometry.	Descriptive Geometry.	
Algebra.	Algebra.	Algebra.	
Analytical Geometry.	Analytical Geometry.	Analytical Geometry.	
Calculus.	Calculus.	Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Zoology.	Mechanical Work.	Zoology.	Botany.
English.	English.	English.	English.
French or German.	French or German.	French or German.	French or German.

THIRD YEAR.

Applied Mechanics.	Applied Mechanics.	Applied Mechanics.	Practical Chemistry.
Materials.	Materials.	Materials.	Assaying.
Surveying.	Machinery & Millwork	Mining.	Blowpipe Analysis.
Drawing.		Practical Chemistry.	Mineralogy.
Analytical Geometry	Drawing.	Blowpipe Analysis.	
Calculus.	Analytical Geometry	Drawing.	
Sphl. Trigonometry.	Calculus.	Analytical Geometry	
Practical Astronomy.		Calculus.	
Mathematical Physics.	Mathematical Physics.	Mathematical Physics.	Mathematical Physics.
Experimental Physics.	Experimental Physics.	Experimental Physics.	Experimental Physics.
Geology.	Mechanical Work.	Geology & Mineralogy.	Zoology.
French or German.	French or German.	French or German.	French or German.

FOURTH YEAR.

Applied Mechanics.	Applied Mechanics.	Assaying.	Practical Chemistry.
Structures in Stone.	Machinery & Millwork	Ore Drawing.	Metallurgy.
" Timber.	Metallurgy of Iron.	Metallurgy.	Mineralogy.
" Iron.		Geology (advanced).	Geology.
Hydraul. Engineering.	Hydraul. Engineering.	Hydraul. Engineering.	
Steam Engine.	Steam Engine.	Steam Engine.	
Materials.	Materials.	Materials.	
Designs.	Designs.	Designs.	
Estimates. Specificat.	Estimates. Specificat.	Estimates. Specificat.	
French or German.*	French or German.*	French or German.*	French or German.*

N.B. (1) Students in the 2nd, 3rd and 4th years will, in addition to the above, attend the series of lectures on some special departments of Engineering. The subject for next Session will be Railway work.

(2) During the summer recess, the Students in the 2nd, 3rd and 4th years are to employ themselves in some mechanical work or on some public work; and they are also to prepare a report on such work, to be handed in not later than September 30th.

(3) Students are not allowed to take subjects which do not form part of their course, without the sanction of the Faculty.

* Modern languages not imperative in the fourth year.

The Third and Fourth Year courses in the different Branches are each divided into an ORDINARY and an ADVANCED Course.

Students taking the ORDINARY course are liable for an examination in the subjects already specified, but are exempted from the Calculus, and certain advanced parts of Analytical Geometry and Applied Mechanics.

Students taking the ADVANCED course are liable for an examination in the subjects already specified, and also in certain advanced portions of Mathematical Physics.

---

§ IV. EXAMINATIONS.

I. FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

There will be a Christmas Examination for Students of the First Year in all the Subjects, and for Students of the following years in those Subjects which they take in the Faculty of Arts. A Sessional Examination will be held at the end of each year.

Candidates for the Degree of Bachelor of Applied Science are liable to be examined:

1. In all the subjects of the *fourth* year.
2. In the Materials and Applied Mechanics of previous years.
3. In the Pure Mathematics of previous years.
4. In a Problem Paper on the Technical subjects of the whole course.

The Problem Paper is not compulsory, but will serve to determine the relative standing of Students.

Practical Chemistry Students are exempted from Nos. 2 and 3 of the above, but are liable for a special Examination in Practical Chemistry, Experimental Physics, and Biology.

The General Classification for the Degree Examination will be under two heads, viz. :—

1. Those who have deserved Honourable Mention, in order of merit.
2. Those who have satisfied the Examiners, in order of merit.

The Degree Examinations in Mathematics and Materials are to be held at the Christmas preceding the Final.

Certificates of merit may be given to such Students as take the highest places in the Degree Examinations.

Special Certificates may be given for proficiency in particular subjects.

Certificates may be given to Students who have passed the Special Courses added to the curriculum.

Students who take their Degree in one of the Courses provided by the Faculty of Applied Science, may obtain credit in either of the remaining Courses by a Post-graduate Course, the necessary provision for which will be made.

II. FOR THE DEGREE OF MASTER OF ENGINEERING.

Candidates must be Bachelors of Applied Science of at least three years' standing. and must produce satisfactory certificates of having been engaged during that time upon *bonâ fide* work in either the Civil, Mechanical, or Mining Branch of Engineering.

They must pass with credit an Examination, which will extend over the general Theory and Practice of Engineering, in which papers will be set having special reference to that particular branch upon which they have, during the three preceding years, been engaged.

The Examination will be held once in each year, in the second week of the month of December, and will be partly written and partly *vivâ voce*.

Notice of the intention of a Candidate to offer himself at any Examination for this degree must be sent in, together with the necessary certificates and fees, not less than two calendar months before each Examination is to be held.

III. FOR THE DEGREE OF MASTER OF APPLIED SCIENCE.

Candidates must be Bachelors of Applied Science of at least three years' standing, must present certificates of having been employed during that time under competent guidance in some branch of scientific work, and must pass with credit an Examination in the Theory and Practice of those branches of scientific work in which they may have been engaged. The other conditions as under the last heading.

---

§ V. SPECIAL PROVISIONS.

1. Occasional Students may be admitted to the Professional Classes upon payment of special fees (§ VII).

2. Undergraduates in Arts may, if allowed by the Faculty of Arts, be admitted to the Professional Classes in Practical Science on payment of the fees for these classes.

3. Students in Applied Science may, by permission of the Faculty, take the Honour Classes in the Faculty of Arts.

4. Students who have passed the Intermediate in Arts not lower than the Second Class in Mathematics, have the privilege of entering the Second Year in Applied Science, and will be exempted from the Mental and Moral Philosophy and the Greek of the Third and Fourth Years in Arts.

5. Undergraduates in Arts of the Second or Third Years, or Graduates of any University, entering the Faculty of Applied Science, may, at the discretion of the Professors, be exempted from such lectures in that Faculty as they may have previously attended as Students in Arts, but must pass all the examinations.

§ VI. ATTENDANCE AND CONDUCT.

The regulations under this head are in all respects the same as those in force for Undergraduates in Arts. (See page 34.)

§ VII. LIBRARY AND MUSEUM.

Students in this Department will have the same privileges with reference to the Library and Museum as Undergraduates in Arts.

§ VIII. FEES.

In the Course of Civil Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mechanical Engineering.—$45; Library, $4. In all $49 for each Session.

In the Course of Mining Engineering.—1st Year, $45; 2nd, 3rd and 4th Years, $55; Library, $4. In all $49 to $59 for each Session.

In the Course of Chemistry.—1st Year, $45; 2nd, 3rd and 4th Years, $55; Library, $4. In all $49 to $59 for each Session.

Matriculation Fee, for the First Year, (to be paid in the year of entrance only $4; for the Second Year, (exigible from Students who enter in the Second Year, and also from those who have failed in the First Year, and re-entered the Second Year on Examination) $6.

Fee for Degree of Bachelor of Applied Science.—$10.

Fee for Degree of Master of Engineering or Master of Applied Science.—$25.

The fees must be paid to the Secretary and the tickets shown to the Dean within a fortnight after the commencement of attendance in each session. In case of default, the Student's name will be removed from the College books, and can be replaced thereon only by permission of the Faculty and on payment of a fine of $2.

The B. App. Sc. fee must be paid before the Examination.

Laboratory Students are required to purchase their own chemicals, &c. The larger articles of apparatus will be supplied by the Laboratory, the Students paying $6 per Session for their use, and being responsible for breakage.

Occasional Students may be admitted to the Professional Classes in any year, by payment of the ordinary fee for that year, and $5 for entrance and use of the Library.

Partial students are required to pay the ordinary Library Fee, and in addition, fees to the amount of $10 for each subject; in the case of Chemistry, however, the additional fee is to be $20, or $10 per term.

Students taking Blowpipe Analysis, when it does not form part of their course, are required to pay a fee of $5.

Occasional Students may attend the course of Instruction in Meteorology on paying a fee of $5.

---

§ IX. COURSES OF LECTURES.

I. CIVIL ENGINEERING AND APPLIED MECHANICS.

Professor:—HENRY T. BOVEY, M.A., C.E.

Civil Engineering.

The course of instruction in Civil Engineering will include the following:—Mechanism, Earthwork, Masonry, Carpentry, Structures of Timber, Stone and Iron, the Construction of Common Roads, Rail Roads, Bridges, Viaducts, Tunnels, Canals, River, Harbour and Sea Works, Drainage Works, Lighthouses, Works connected with Irrigation and Water Supply, &c.

Applied Mechanics.

The subject of Applied Mechanics will be treated under two heads:—

(*a*). The Strength of Materials, embracing a study of Work, Inertia, Energy and Entropy, the Strength, Stiffness and Resilience of Materials, Beams or Girders, Pillars, Shafts, Structures (*simple and complex*), Earthwork, Retaining Walls and Arches.

(*b*). Hydraulics, comprising the Theory of Hydrostatics and Hydrodynamics, the Flow of Liquids through Orifices, Pipes and Canals, the Action of a Stream on inclined or curved Vanes (*Fixed or Revolving*), Hydraulic Machines (*Pressure Engines, Vertical Water Wheels, Turbines, Centrifugal Pumps*), Pneumatics.

Steam and the Steam Engine.

The course of instruction in this Department will embrace :—The General Description of the Steam Engine, the Theory of Heat, the Application of Heat to Thermal Machines, the Production of Heat and Steam, and also :—

(*a*). The movement and distribution of Steam, including the action of Steam in a Cylinder, the methods and regulation of the distribution of Steam, Systems of Cut-off, the general disposition of Cylinders, Condensers, &c.

(*b*). The modes of transmission and a consideration of certain special machines.

(*c*). The construction of an Engine, under which head will be considered Rivets, Bolts, Screws, Sockets, Keys, Cylinders, Pistons, Organs of Distribution *Slide, Throttle, Clack, and other Valves*), Organs of Transmission (*Connecting Rods, Beam, Plumber-blocks, Journals, Cranks, Shafting, Eccentrics*).

(*d*). The construction of Special Machines (*Locomotive*).

Designs, Estimates, &c.

Engineering Students will also prepare designs, specifications, and estimates or such works as are usually undertaken by the Engineer.

Each Student works independently, under the personal supervision of the Professor of Engineering, and makes such drawings and calculations as would be needed were the structure designed to be actually carried out.

Instruction will be given in :—

(*a*). The drawing of parts of machines from given dimensions.

(*b*). The use of geometrical drawing in arranging and designing the parts of machines, and the methods of working out various mechanical problems graphically.

(*c*). The designing of bridges, machines, and engineering structures generall y

(*d*). The taking out of quantities and making of estimates from drawings.

II. MECHANICAL ENGINEERING.

Professor BOVEY and Lecturer MCLEOD.

Mechanism.

The lectures on Mechanism will treat of :—The object and structure of a machine and the parts of a machine, bearings, connections (*simple and complex*), elementary combinations and their classification, shewing the various modifications of motion (*with constant or variable velocity-ratios*), engagements (*teeth of wheels, &c.*), adjustments.

Theory of Machines.

This Branch will comprise :—

(a). The Transmission of Work, including the measurement of work, the efficiency of machines, dynamical friction, viscosity, and the methods of transmitting work *(by continuous rotation, oscillation, belts, water, and compressed air).*

(b). The Modification of Work and Stores of Energy, embracing a study of the actual energy of moving pieces, springs and weights.

(c). Governing and Controlling Machines, including a consideration of uniform effort, variable resistance, machines driven by fluid pressure, differential governors.

(d). Balancing Machinery.

Mechanical Work.

A course of lectures will be given on the following specific Departments of Mechanical Engineering, and will treat entirely of the principles and results of actual practice:—The different classes of machinery. Belts, Gearing, Forging, Hammers *(Trip, Crank, Steam and Compound)*, the Tempering of steel, Tools, Vise-work, Fitting and Finishing, Lathes and Lathe work, Planing, Slotting and shaping Machines, Boring and Drilling, Milling and Milling tools, Screw-cutting, the Slide-valve, Standard Measures, Gauging Implements, and calculations respecting the speed of Wheels, Pullies, &c.

III. MINING ENGINEERING.

Professor:—B. J. HARRINGTON, B.A., PH.D.

The object of this course is to give Students a knowledge of the characters and mode of occurrence of various economic minerals, together with the methods employed for their extraction and subsequent treatment.

The lectures on Mining are given during the Third Year, and among the subjects taken up the following may be mentioned: Blasting and the nature and use of different Explosives, Quarrying, Hydraulic Mining, Boring, the Sinking, Timbering and Tubbing of Shafts, Driving and Timbering of Levels, Underground Conveyance and Hoisting, Drainage and Pumping, Lighting and Ventilation of Mines, special methods of Exploitation employed in the working of Metalliferous Deposits or of Coal Seams, &c. During this year also, instruction is given in Blowpipe Analysis, the object of which is to enable Students by means of the blowpipe and a few simple reagents to detect the nature of different Minerals or Ores. On account of the small amount of apparatus required, and the rapidity with which accurate results may be arrived at, a knowledge of this subject will be found most useful to those engaged in geological or other field-work.

In the Fourth Year a course of lectures on Metallurgy is given, and assays are made of various Ores, Fuels, &c.

NOTE.—The lectures on Mining and Metallurgy are illustrated by a series of Models of which a list is given on page 64.

IV. SURVEYING AND DESCRIPTIVE GEOMETRY.

Lecturer:—C. H. MCLEOD, MA.E.

Surveying.

This course is designed to afford the Student such instruction as will enable him to be of immediate service upon entering the office of an Engineer or Sur-

veyor, and to qualify him to pass all the examinations prescribed in this subject by the Dominion and Provincial Boards of Land Surveyors.

The course of instruction will be as follows :—

SECOND YEAR.—Chain Surveying. Compass Surveying. The use and adjustment of the Transit, Theodolite, Level (Dumpy, Y, and other forms), Sextant. Aneroid Barometer, Plane-table and other field instruments. Contour Surveying. Underground Surveying. Plotting and the best methods of calculating areas, both from the plot and directly from the notes.

In addition to the above this Class will, under the personal supervision of the Lecturer, make a Chain Survey of a tract of country. Each Student will be required to plot the survey from his own notes.

THIRD YEAR.—Topography. Methods of Setting out Work. Indirect and Barometric Levelling. Hydrographic Surveying. Spherical Surveying. Practical operations in the Field.

FOURTH YEAR.—Field operations.

Note.—The Field Operations undertaken by the Students of the 2nd, 3rd and 4th years will comprise a contour survey and an angular survey of a piece of ground ; the location of a line of road, including the making of preliminary surveys, the ranging of curves, the tracing, levelling and setting out of the line selected ; an Hydrographic Survey,—of which the two latter are done on alternate years. The Students of the 2nd and 3rd years will be required to prepare maps and sections from notes taken, by themselves, in the field.

Descriptive Geometry.

SECOND YEAR.—(1) *Linear Drawing.*—Various straight line constructions. Circles. The Conic Sections. Spirals. Involutes. Cycloids and other curves. Practical applications of the foregoing. (2) *Orthographic projection.*—The planes of projection. The projection of points, straight lines, curves and plane figures. The traces of straight lines and planes. The representation of solids, including bodies bounded by planes, and solids of revolution. The penetration of solids and the development of their surfaces. Sections of solids. Helices and screws. Tangent planes and normals. (3) *Spherical projections.*—Orthographic projections of the sphere. The construction of maps, including Mercator's and Flamstead's methods. The graphical determination of spherical triangles. (4) *Isometric projections.*

THIRD YEAR.—(1) *Shades and Shadows :*—Shadows of points and lines. Brilliant points. Practical problems. (2) *Mathematical Perspective.*—The picture plane and the eye. The perspective of points and lines. Vanishing points and measuring points. Vanishing lines of planes. The perspective projection of solids. Vanishing points of rays of light and of projections of rays. The perspective of shade and shadow.

V. CHEMISTRY.

Lecturer :—B. J. HARRINGTON, B.A., PH.D.

A course of forty-five lectures, illustrated by experiments, is given to all Students of the First Year on the properties and preparation of the Non-Metallic and Metallic Elements, and many of their compounds, the laws of Chemical Combination by weight and volume, the Atomic Theory, Chemical Formulæ and Equations, characteristics of Acids, Bases and Salts, Compound Radicals, &c.

In the Second and Third Years additional instruction will be given to Students of the Mining and Chemistry Courses in the construction of apparatus, preparation of gases, &c.

VI. PRACTICAL CHEMISTRY.

Professor :—GILBERT P. GIRDWOOD, M.D.

This course will be conducted in the Laboratory of the Medical Faculty, and will be specially designed for Chemistry Students of the Third and Fourth Years. It will include instruction in the method of Qualitative and Quantitative Analysis of Inorganic and Organic Bodies, Fractional Distillation, determination of Boiling Points, Melting Points, &c.

Students taking these subjects are supposed to have already obtained, in the earlier years of their course, a preliminary knowledge of the use of the Balance, Determination of Specific Gravities, Construction of Apparatus, Preparation of Gases, &c.

VII. GEOLOGY.

Professor :—J. W. DAWSON, LL.D., F.R.S. (Logan Professor of Geology.)

Assistant Professor :—B. J. HARRINGTON, B.A., PH.D.

SECOND YEAR.—A preliminary Course in Zoology, with special reference to Fossil Animals.

THIRD YEAR.—Mineralogy, Lithology, Physical and Chronological Geology, and Palæontology, Geology of Canada, Methods of Geological Exploration.

FOURTH YEAR (Mining Students only).—Special Studies in Mineralogy and Lithology, Advanced Course in General Geology and Palæontology, Geology of Canada, Practical Geology and Field-work.

VIII. MATHEMATICS AND MATHEMATICAL PHYSICS.

Lecturer :—G. H. CHANDLER, M.A.

The lectures in this course are specially designed to meet the requirements of Students of Applied Science ; those in Mechanics being introductory to Applied Mechanics. The subjects are as follows :—

FIRST YEAR.—(1) Euclid, books 1, 2, 3, 4, 6, with definitions of book 5. (2) Theories of *Loci*, *Transversals* and *Harmonic Division*. (3) *Algebra*, to Progres-

sions. (4) *Plane Trigonometry*, including heights and distances, and the use of Logarithms. (5) Elements of *Solid Geometry*, with elementary mensuration of surfaces and solids. (6) *Geometrical Conic Sections*. The parabola and fundamental properties of the ellipse and hyperbola.

SECOND YEAR.—(1) *Continuation of Algebra*. Progressions. Infinite series. Indeterminate coefficients. Binomial and exponential theorems. Theory of Logarithms. (2) *Analytical Geometry*. Tracing of curves. Determination of Equations. Transformation of co-ordinates. The straight line, circle, and conic sections. (3) *Differential and Integral Calculus*. Differentiation and integration of functions of one variable. Successive differentiation. Maclaurin's Theorem. Applications to Maxima and Minima and to Geometry. (4) *Mechanics*. The triangles, parallelograms and polygons of velocities, accelerations, and forces. Change of units. Inertia. Work and energy. Laws of motion. Motion in a straight line, parabola, and circle. Equilibrium of forces in one plane. Friction. Centres of gravity. Action of forces in machines. Moduli of machines. Equilibrium and pressure of liquids. Pumps, Hydraulic Cranes and Presses.

THIRD YEAR.—(1) *Spherical Trigonometry*. Deduction of formulæ for the solution of spherical triangles, and for the spherical excess. (2) *Practical Astronomy*. Diurnal motion. Refraction. Parallax. Principal methods used in the determination of Azimuth, Latitude, Longitude and Time. (4) *Mechanics*. Pressure and equilibrium of gases. Various problems in Mechanics.

For Advanced Students:—Continuation of Analytical Geometry and Calculus with applications to Mechanics.

IX. EXPERIMENTAL PHYSICS.

Professor:—ALEXANDER JOHNSON, LL.D. (Peter Redpath Professor of Natural Philosophy.)

The lectures will embrace 1:—*Light*.—Theories.—Reflection.—Refraction.—Dispersion.—Interference and Diffraction.—Double Refraction.—Polarisation. 2:—*Heat*.—Dilatation of Solids, Liquids and Gases.—Specific and Latent Heat.—Radiation and Conduction.—Mechanical Theory of Heat. 3:—*Electricity*.—Statical and Dynamical; including Electro-Magnetism.—Magneto-Electricity.—Thermo-Electricity.—Diamagnetism.—Electric Measurements.—Practical Applications to Telegraph, &c. 4:—*Magnetism*. 5:—*Sound*.—Theory of Undulations.—Production and Propagation of Sound.—Vibrations of Strings, Rods, and Plates.—Vibration of Fluids.—Musical Sounds. Text-book: GANOT'S TREATISE on Physics, translated by Atkinson. This Course extends over two years.

The subjects for the Session 1880-81 are Light and Heat.

X. ENGLISH LANGUAGE AND LITERATURE.

Professor:—VEN. ARCHDEACON LEACH, D.C.L., LL.D. (Molson Professor of English Language and Literature.)

Associate Professor:—CHARLES E. MOYSE, B.A.

FIRST YEAR.—English Language and Literature.

SECOND YEAR.—A special course on English Composition.

XI. FRENCH OR GERMAN.

French :—Professor P. J. Darey, M.A., B.C.L.
German :—Professor C. F. A. Markgraf, M.A.

Students of this Faculty are required to take the course in one of these languages provided by the Faculty of Arts.

XII. METEOROLOGY.

Instruction in Meteorological Observations will be given in the Observatory at hours to suit the convenience of Senior Students.

Certificates will be granted to those Students who pass a satisfactory examination on the construction and use of Meteorological Instruments, and on the general facts of Meteorology.

N.B.—Students of the Second, Third and Fourth Years will be required to answer satisfactorily a weekly paper on such subjects of the course as shall be determined by the Faculty.

---

§ X. LIST OF TEXT-BOOKS.

Engineering :—Rankine's Civil Engineering, Rankine's Machinery and Mill work, Rose's Complete Practical Machinist.

Applied Mechanics :—Rankine's Applied Mechanics, Downing's Hydraulics, Goodeve's Elements of Mechanism, Willis' Principles of Mechanism.

Steam.—Rankine's Steam Engine, Goodeve's Steam Engine.

Surveying :—Gillespie's Land Surveying.

Geology :—Dana's Geology, Dana's Mineralogy, Dawson's Handbook of Zoology, Nicholson's Palœontology, Geological Survey Reports, Dawson's Acadian Geology.

Blowpipe Analysis :—Brush's Determinative Mineralogy and Blowpipe.

Chemistry.—Wilson's Inorganic Chemistry. Fresenius' Qualitative and Quantitative Analysis.

Mathematics :—Todhunter's Euclid, Todhunter's Algebra, Hamblin Smith's Trigonometry, Wilson's Solid Geometry and Conic Sections, Loomis's Analytical Geometry and Calculus, Goodeve's Principles of Mechanics, Chambers's Practical Mathematics.

---

§ XI MINING AND METALLURGICAL MODELS.

1. Man-Engine.—This is a large working model showing two forms of the so-called Man-Engine, or Fahrkunst, for raising and lowering miners in deep mines. The Fahrkunst generally consists of two strong beams or rods of wood

to which platforms are attached at intervals for the men to stand upon. The rods are suspended in the shaft and a reciprocating motion communicated to them from a steam-engine or water wheel. When a miner wishes to ascend, he simply steps upon the lowest platform ; the rod then rises for, say, twelve feet, and the man steps on to a platform on the opposite rod which lifts him another twelve feet, and so on until the surface is reached.

2.—Boring Tower and Boring Tools.—A model of a form of Boring-tower which has been extensively employed in Belgium, where boring operations have been carried on with great success. It is supplied with Kindt's free-falling apparatus, an ingenious contrivance for preventing the concussion from the chisel being communicated to the rods above. There are also models of several varieties of tools such as are used in extracting broken rods from bore-holes.

3.—Vertical Shaft with Pumps, Man-Engine, Hoisting Apparatus, &c.—This large and beautiful model shows the way in which shafts are timbered and divided into different compartments for hoisting, for man-engine, ladder-way and pumps. It is provided with two large overshot water-wheels, supposed to be placed at a considerable distance from the surface, and affording the necessary power for hoisting as well as for working the pumps and man-engine. The ore is raised in two wooden skips supplied with guides, the one ascending while the other descends.

4.—Vertical Shaft with Pumps and Man-Engine.—Somewhat similar to No. 3, but having only one water-wheel and no hoisting apparatus.

5.—Model showing the underground working of a Mine.—By means of this beautifully constructed model an idea may be easily obtained of the ordinary methods of working metalliferous veins of moderate thickness. It shows both shaft and galleries, different methods of timbering and walling, and exploitation by *overhand* and *underhand stoping*.

6.—Timbering.—Three models illustrating the partial and complete timbering of galleries.

7.—Walling.—Three models illustrating the walling of galleries with bricks.

8.—Tram-Waggon.—Model of a waggon such as is used in many of the English mines. The box is of wood, strongly bound with iron ; the wheels are of iron, and turn upon axles which are specially designed for use on roadways with sharp curves.

9.—Skip.—Model of a wooden skip or box for raising ore in a vertical shaft.

10.—Skip.—Model of a wooden skip for hoisting ore in an underlie shaft.

11.—Kibble.—Model of a wooden kibble or bucket for raising ore.

12.—Horse Whim.—Model of a form of horse-whim once extensively used in the Saxon mining regions. The principle is the same as in the case of the ordinary whim so frequently seen in Cornwall, but the details are more elaborate, as it was originally designed for permanent hoisting.

13.—Hartz Ventilator or Air Pump.—A simple but useful contrivance employed in the mines of the Hartz for temporary ventilation while shafts are being sunk or levels driven.

14.—Stamp Batteries.—Working model of three batteries of stamps for stamping ores, gold-bearing quartz, &c. Stamps like this model are employed in some parts of Europe, but those used in this country differ from it considerably.

15.—Stossheerd or Shaking Table.—A machine extensively used in different parts of the world for the separation of ores from the gangue or useless material with which they are commonly associated.

16.—Rotating Buddle.—Like the last, a machine largely used for the concentration of ores.

17.—Slime Box or Trench.—A kind of wooden box used for the concentration of "slimes" or pulverized ores.

18.—Pattinson's Concentrating Apparatus.—Model of one of the iron pots and accompanying heating apparatus used in Pattinson's process for the extraction of silver from lead.

19.—Belgian Zinc Furnace.—This is an exact model of furnaces used in Belgium and elsewhere for the extraction of zinc from its ores by distillation in retorts. It shows not only the arrangement of the retorts but also the details of the heating apparatus.

20.—Blast Furnace.—This is a model of a blast furnace, the stack of which is supposed to be constructed of masonry. It is made in two sections so that the Student may obtain a view of the details of the interior. The lining, hearth flues for tapping off the waste gases, &c., are admirably shown.

21.—Reverberatory Furnace.—Model of an English Reverberatory Furnace made in two sections so as to show the details of the interior.

---

§ XII. MECHANICAL MODELS.

The collection of working Models in this Department is illustrative of

(1). The Steam Engine showing the characters of
  (*a*). Horizontal, Vertical, Locomotive and Marine Engines.
  (*b*). Link-motion and reversing gear.
(2). Various form of parallel motion.
(3). Link-work, as employed to produce,—(*a*). Alternate intermittent motion. (*b*). Rotatory and Oscillatory motions with varying velocities. (*c*). Variable motion. (*d*). The motion of a Mortising Machine. (*e*). The motion of a Combination of Hooke's Joint. (*f*). The motion of two parallel axes connected by side-rods. (*g*). Whitworth's quick return motion. (*h*). Boehm's motion of two parallel shafts. (*i*). The conversion of circular into linear motion.
(4). Rolling and sliding contact, as shown by
  (*a*). Conical toothed-wheel and toothed cone on Romer's principle.
  (*b*). Skew-bevils.
  (*c*). Worm-wheel and worm.
  (*d*). Face-plates with cross grooves.
  (*e*). A Punching Machine.

(*f*). Shifting Slides and Cams to show the different forms and actions of plain cams and tappets.

(*g*). A model illustrating the various conditions of wrapping contact.

(*h*). A double rack and segmental toothed wheel producing reciprocating motion.

(*i*). Non-circular wheels.

(*j*). Spur wheels with Epycycloidal teeth.

(*k*). The motion of a Mangle-wheel.

(*l*). A set of excentric and elliptic toothed wheels.

(*m*). A triple toothed rack producing reciprocating motion.

(*n*). The hoop and pin wheel producing intermittent motion.

(*o*). A combination producing continuous slow motion.

(*p*). The silent click.

(*q*). A model illustrating the principle of Calculating Machines.

The School possesses a valuable set of Surveying and Engineering Instruments which Students make use of during the Session, when engaged on Field-work.

LECTURES IN THE FACULTY OF APPLIED SCIENCE.

SESSION 1880–81.

YEARS.	HOURS.	MONDAY.	TUESDAY.	WEDNESDAY.	THURSDAY.	FRIDAY.
FIRST YEAR.	9					Mathematics.
	10	Mathematics.	French / German.	French.	French / German.	
	11	English.		English.		English.
	12	Chemistry.	Mathematics.	Mathematics.	Mathematics.	Chemistry.
	2	Drawing.		Drawing.		Drawing.
	3	do		do		do
	4	do		do		do
SECOND YEAR.	9	French.	Railway Work.	German.	Materials.	French.
	10	German.	Botany.		Botany / Mathematics.	English.
	11	Mathematics.	Zoology.	Math. Phys.	Zoology.	Math. Physics.
	12		Exp. Physics.	French.	Exp. Physics.	German.
	2	Surveying / Prac. Chem.	Mechanism.	Surveying.	Drawing, / Mech. Work / Prac. Chem.	Mechanism.
	3	Drawing.	Drawing.	Drawing.	Drawing.	Drawing.
	4	do	do	do	do	do
THIRD YEAR.	9		Railway Work.	Geology.	Materials.	Geology.*
	10	Geology.	French.	Mathematics.	French.	Geology.
	11		German.		German.	
	12	Math. Physics.	Exp. Physics.	Drawing.	Exp. Physics.	Math. Physics.
	2	Prac. Chem. / Drawing, / Machinery	App. Mech.	Blowpipe / Analysis.	Prac. Chem., / Machinery / Surveying.	App. Mech.
	3	Surveying.	Drawing, / Mining,	do	Drawing.	Drawing.
	4	Drawing.	Drawing.	do	do	do
FOURTH YEAR.	9	Geology.*	Railway Work	Design., &c.	Design., &c.	Geology.*
	10	Design., &c.	Design., &c.	do	do	
	11	do	do	do	do	
	12	do	do	Geology.*		
	2	Assaying / Construction.	Hydraulics.		Assaying / Construction.	Hydraulics.
	3	Machinery.	Steam.		Mech. Work / Assaying.	Steam.
	4			Metallurgy.*	do	

* For Mining Students only. † For Students in Mining and Chemistry.

Field work for 2nd and 3rd years on Mondays, Wednesdays and Fridays during September and October.

Faculty of Medicine.

THE PRINCIPAL, (ex-officio.)

Professors :—CAMPBELL, SCOTT, WRIGHT, HOWARD, MCCALLUM, CRAIK, FENWICK,

Professors :—DRAKE, GIRDWOOD, ROSS, OSLER, RODDICK, GARDNER.

Dean of the Faculty.—G. W. CAMPBELL, A.M., M.D., LL.D,

Registrar.—W. OSLER, M.D.

Demonstrator.—FRANCIS J. SHEPHERD, M.D.

Assistant-Demonstrator.—R. L. MACDONNELL, B.A., M.D.

The forty-eighth Session of the Medical Faculty of McGill University will be opened on Friday, October 1st, 1880, with a general Introductory Lecture at 11 a.m. The regular lectures will begin on Monday, the 4th Oct., at the hours specified in the time-table, and will be continued during the six months following.

The Medical College, a large and substantial building situated within the University Grounds, contains two spacious class rooms, Students' waiting-room, Library, Museum, Laboratories, together with a large and well-furnished Dissecting-room.

During the past year one of the three lecture rooms has been converted into a Physiological Laboratory and fully equipped with suitable apparatus.

The class tickets for the various courses are accepted as qualifying candidates for examination before the various Colleges and licensing bodies of Great Britain and Ireland, and the College of Physicians and Surgeons of Ontario.

To meet the circumstances of the General Practitioners in British North America, where there is no division of the profession

into Physicians and Surgeons exclusively, the degree awarded upon graduation is that of "Doctor of Medicine and Master of Surgery," in accordance with the general nature and character of the curriculum, as fully specified hereafter. The degree is received by the College of Physicians and Surgeons of the Province of Quebec.

I.

MATRICULATION.

(*a*) *University Matriculation Examination.*

This examination is the same as that recommended by the Medical Council of Great Britain. Examinations in conformity therewith will be held the last Saturday in March and the first Saturday in October of each year. Applications may be made to the Registrar of the Faculty till the evening of the previous day. The requirements of the standard for Matriculation are:—"Compulsory:—English Language, including grammar and composition; "Arithmetic, including vulgar and decimal fractions; Algebra, including simple equations; Geometry, first two books of Euclid; "Latin, translation and grammar;—and one of the following "optional subjects:—Greek, French, German, Natural Philosophy, "including mechanics, hydrostatics, and pneumatics."

TEXT BOOKS.—Latin,—Cæsar, Commentaries, Bk. I.; or Virgil, Æneid, Bk. I.

GREEK.—Xenophon, Anabasis Bk. I., or equivalent.

FRENCH.—Charles XII., Two Books.

NATURAL PHILOSOPHY.—Ganot's Physics.

Graduates in Arts of recognized Universities are not required to submit to the Matriculation Examination, and a certificate of having passed this Examination before the College of Physicians and Surgeons of Ontario or of Quebec will be accepted by this University.

Students of the Provinces of Quebec and Ontario are required by the laws of those Provinces to pass the matriculation examinations of the provincial Medical Boards. In Ontario, Graduates in Arts are exempted from this examination.

(*b*) *Matriculation Examination of College of Physicians and Surgeons of the Province of Quebec.*

The subjects of examination are as follows :—

Compulsory Subjects :—English, French, Latin, Arithmetic, Algebra, Euclid, History, Geography, Belles-Lettres.

Optional Subjects :—Candidates can select any one of the following :—Greek, Natural and Moral Philosophy.

The Examinations will be held upon Thursday, the 23rd of September, 1880, at Quebec, and on Thursday the 5th of May, 1881, at Montreal. Applications to be made to Dr. Dagenais, Montreal, or Dr. Belleau, Quebec.

Examination Fee, ten dollars. Should the candidate be unsuccessful, one half the fee will be returned.

Of the four years study *after* having passed the Matriculation Examination, three six months' sessions, at least, must be attended at a University, College, or Incorporated School of Medicine, recognized by the "Provincial Medical Board," and the first session must be attended during the year immediately succeeding the Matriculation Examination.

(*c*) *Matriculation Examination of the College of Physicians and Surgeons of the Province of Ontario.*

The examination is held in Toronto and in Kingston on the first Tuesday and Wednesday after Good Friday, and the third Tuesday and Wednesday in August of each year. It is compulsory upon all Students of the Province of Ontario. Graduates in Arts are exempted.

The subjects are as follows :—English Language, including grammar and composition ; Arithmetic, including vulgar and decimal fractions ; Algebra, including simple equations ; Geometry, first two books of Euclid ; Latin, translation and grammar ; and upon one of the following subjects (of which Students are recommended to select either Natural Philosophy, or one of the Modern Languages), the candidate having the option of naming the subject upon which he will be examined, viz. :- Greek, French, German, Natural Philosophy, including mechanics, hydrostatics and pneumatics.

Text Books.—Where more than one is named, the candidate may select one upon which he will prefer to be examined, viz :

Latin—Cæsar, *Commentaries on Gallic War*, fifth and sixth

books; Cicero, *Manilian Law;* Virgil, *Æneid*, second book.
Greek—Xenophon, *Anabasis*, first book.
French, Voltaire, *Charles XII.*, 6th, 7th and 8th books.
German—Adler's Reader, first part.
Natural Philosophy—Peck's Ganot; Sangster's first book.

The attention of all intending Students from the Provinces of Quebec and Ontario is seriously requested to the importance of passing their Matriculation Examination IN THE SPRING. This is necessary under the law, which requires four full years of professional study from the date of Matriculation.

II.

ENREGISTRATION.

The following are the University Regulations :—

All Students desirous of attending the Medical Lectures shall, at the commencement of each Session, enrol their names and residences in the Register of the Medical Faculty, and procure from the Registrar a ticket of Enregistration, for which each Student shall pay a fee of $4; excepting in the Clinical Classes, in which enregistration for Students of other Schools shall not be compulsory.

The said Register shall be closed on the last day of October in each year, and no tickets obtained from any of the Professors shall be received without previous enregistration.

Enregistration in the Summer Session is compulsory upon all Students, whether attending one or more of the Classes.

III.

COURSES OF LECTURES.

1 Anatomy.—[Prof. Scott.]—The importance of Anatomy, both descriptive and in its relation to Medicine and Surgery, is duly considered by the Professor, who employs chiefly the fresh subject in the illustration of the lectures, aided, however, by dried preparations, wax models, plaster casts of dissections, plates, &c., the full size of life.

2 Practical Anatomy.—[Drs. Shepherd and MacDonnell.]—Special attention is devoted to this important branch, the teaching being similar to that of the best European schools. The Dissecting-Room is open from 8 a.m. to 10 p. m.,

the Demonstrators' hours are from 10 to 12 a. m., and 8 to 10 p.m. Special Demonstrations on the Brain, Thorax, Abdomen, Bones, etc., are frequently given. Every Student must be examined *at least* three times on each part dissected, and, if the examinations are satisfactory, a certificate is given. Prizes are awarded at the end of the Session for the best examination on the fresh subject. Material provided under cost.

3 Chemistry.—[Prof. Girdwood]—Inorganic Chemistry is fully treated : a large portion of the course is devoted to Organic Chemistry and its relations to Physiology. The branches of Physics bearing upon or connected with Chemistry also engage the attention of the Class. For experimental illustration, abundant apparatus is possessed by the Professor, among which may be enumerated, a powerful Air Pump—Oxy-Hydrogen Microscope—Polariscope—extensive series of Models of Crystals, Electrical and Galvanic apparatus, steam engine, &c., &c.

4 Practical Chemistry.—[Prof. Girdwood.]—Thorough instruction is given in the different departments of Practical Chemistry in the Laboratory of the Faculty under the personal supervision of the Professor. The course includes blow-pipe manipulations, qualitative and quantitative analysis, toxicological investigations, &c., &c. This class may be taken in the Summer Session.

5 Institutes of Medicine.—[Prof. Osler and Assistant.]—Embraced in this course are the following classes :—

(*a*) **Physiology,** comprising,

(1) A full course of didactic lectures upon the structure and functions of the various organs of the body in health. The lectures are illustrated by fresh preparations, diagrams, plates and models, and, when practicable, by experiments.

(2) Practical demonstrations, held every Saturday from 2 to 4 p. m. In this class a complete series of histological preparations is exhibited and explained. Specimens illustrative of physiological anatomy and practical physiology are also shown, and the Students invited to propound and discuss any questions which may not have appeared clear to them.

(3) Practical Histology—normal and pathological. A course of 25 lessons—Microscopes, re-agents and material provided. This course is generally held during the Summer Session, but will also be conducted during the Winter if a class of 10 Students be formed. It comprises thorough instruction in the use of the Microscope and the preparation of the tissues, each Student preparing for himself during the course a cabinet of 100 or more specimens.

(*b*) **Pathology,** comprising,

(1) A limited number of lectures on General Pathology, which are included in the systematic course on the Institutes.

(2) Pathological Demonstrations—weekly—Saturday, 11 a.m. This course is

based upon, and conducted, as far as possible, in the same way as that of Prof. Virchow, at the Berlin Pathological Institute. Specimens of all kinds are collected throughout the week, kept fresh until Saturday, and then brought before the class, when practical comments are made upon them. An idea of the amount of material at command may be gathered from the fact that over 150 fresh pathological specimens, illustrative of almost all the common forms of disease, were laid before the class during the past session.

(3) Instruction in Post-mortems—The Autopsy Room of the General Hospital is in charge of the Professor, and the post-mortems are performed by the Students in rotation, under his supervision. System and thoroughness in inspection are insisted upon, the method followed being that of Virchow. As far as possible, attention is drawn to the Medical Anatomy of the thoracic and abdominal organs. In connection with this class, aided by the Professor of Medical Jurisprudence, two Coroners' Inquests will be conducted during the Session before the class, and the Medico-legal aspects of post-mortems dwelt upon.

6 Materia Medica.—[Prof. Wright.]—In this course the ordinary Medicines officinal in the British Pharmacopœia are taken up in classes according to their chief actions, and described under the various heads peculiar to Pharmacology. The Therapeutics of each are fully detailed, under the effects that follow from different doses. Those from toxic or over-doses are added, together with the mode of treatment, etc. The course is illustrated from a cabinet of the various drugs and their preparations, and the plates of Wagner, Roque, Stevenson and Churchill are also shewn. Analytical experiments with the ordinary re-agents are exhibited.

7 Theory and Practice of Medicine.—[Prof. Howard.]—While the lectures on this subject are mainly devoted to Special Pathology and Therapeutics, the department of General Pathology in this University being included in the Institutes of Medicine, no opportunity is lost of illustrating and explaining the *general* laws of disease. With the exception of certain affections seldom or never observed in this country, all the important diseases of the body, not described from the chairs of Surgery and Obstetrics, are discussed, and their Pathological Anatomy illustrated by the large collection of morbid preparations in the University Museum, and by fresh specimens contributed by the Demonstrator of Morbid Anatomy.

The College possesses an extensive series of Anatomical plates illustrative of the histological and anatomical appearances of disease, and the wards of the General Hospital afford the lecturer ample opportunities to refer to living examples of very many of the maladies he describes and to give the results of treatment.

8 Clinical Medicine.—[Prof. Ross.]—Attendance is given in the Medical Wards of the Montreal General Hospital on three days of every week. Accurate reports of all cases are kept by duly appointed clinical clerks, and are systematically read before the class. Instruction is given by the bedside, and special inducements are offered to every pupil to take part in the physical examination of patients. The mode of conducting investigations, the use of the microscope, the value of the ther-

mometer and ophthalmoscope, etc., in Medical Diagnosis, are all explained and illustrated. Senior Students are called upon in rotation to examine new cases before the class, and to be examined thereon as to their general knowledge. In addition, one weekly Clinical Lecture is delivered, bearing upon some case or cases of importance which may happen to be under observation at the time. Special attention is directed to Medical Anatomy, and candidates for the degree will be examined thereon.

9 Surgery.—[Prof. Fenwick.]—Divided into Principles and Practice, including Surgical Anatomy and Operative Surgery, exhibited on the subject. The various surgical instruments and apparatus are exhibited, and their uses and applications explained and practically illustrated.

10 Clinical Surgery.—[Prof. Roddick.]—This course is eminently practical, consisting of bedside instruction and lectures delivered weekly, illustrative of Surgical cases actually present in the wards of the General Hospital. The class is taken charge of by the Teacher on alternate days, when the reports of the Clinical clerks are read and criticized, and fresh cases examined by the senior Students. The Surgical dressings are, as much as possible, reserved for these occasions, so as to give all present an opportunity of participating in the application of splints to fractures, dressing of wounds, minor operations, etc. Major operations are performed in the spacious theatre attached to the Hospital, which is so admirably constructed that the most distant can generally obtain a fair view of the operation. This is also used as a Lecture Room by the Clinical Professors. All of the recently invented appliances for the treatment of Surgical disease have been introduced into the Hospital, prominent among which is a complete outfit of Lister's Antiseptic Apparatus, so that this excellent method of treating wounds is now almost universally adopted.

11 Midwifery.—[Prof. McCallum.]—Including diseases of women and children, illustrated by a series of drawings on a large scale, by humid preparations, by models in wax, by the use of the artificial Pelvis, and by cases in the wards of the Lying-in Hospital.

12 Medical Jurisprudence.—[Prof. Gardner.]—This course includes *Insanity*, to which a good deal of attention is devoted, the subject being treated of in its Medical as well as Medico-legal aspects. Special attention is devoted to the subject of blood stains, the Clinical, Microscopic and Spectroscopical tests for which are fully described and shown to the class. The various spectra of blood in its different conditions are shown by the Sorby-Browning Micro-spectroscope, so well adapted for showing the reactions with exceedingly minute quantities of suspected material. Recent researches in the diagnosis of human from animal blood are alluded to. In addition to the other subjects usually included in a course of this kind, Toxicology is taken up. The modes of action of poisons, general evidence of poisoning and classification of poisons are first treated of, after which the more common poisons are described with reference to symptoms, post-mortem ap-

pearances, and chemical tests. The post-mortem appearances are illustrated by plates, and the tests are shown to the Class.

13 Hygiene and Public Health.—[Prof. Gardner.]—A three months' course of Lectures will be delivered on this subject, the attendance upon which is now compulsory.

14 Opthalmology and Otology.—[Dr. Buller.]—Will include a course of lectures on diseases of the Eye and the Ear, both Didactic and Clinical. In the former the general principles of diagnosis and treatment will be dealt with; in the latter, cases illustrative of the typical forms of ordinary diseases of these organs will be exhibited and explained to the class, and afterwards placed under the special care of gentlemen who may show themselves competent to take charge of them. A Course of Operations on the Cadaver will be open to such Students as may wish to avail themselves of the same.

15 Botany and Zoology.—[Prof. Dawson.]—The Course in Botany is illustrated by specimens, diagrams, models, and the miscroscope. Students have access without any additional fee to the lectures in Zoology in the Faculty of Arts, and to the Natural History Museum of the University and the Museum of the Natural History Society of Montreal.

16 Helminthology.—A course of six lectures on the Parasitic Diseases of Man and the Domestic Animals. (Prof. Osler). The life history and development of the Entozoa, together with the diseases caused by them, are fully considered. The lectures are illustrated by a series of beautiful diagrams, and by fresh and prepared specimens.

The following are extracts from the University Regulations with respect to the courses of Lectures:

1st. Each Professor shall deliver at least five Lectures during the week, except in the classes of Clinical Medicine and Clinical Surgery, in which three bedside demonstrations and one Clinical Lecture shall be given; and in that of Medical Jurisprudence, if extended through six months, in which case three Lectures a week will suffice.

2nd. Every Lecture shall be of one hour's duration.

3rd. Every Professor shall occasionally examine his class upon the subjects treated of in his preceding Lectures, and every such examination shall be considered a Lecture.

4th. A roll of the names of the Students attending each class shall be called from time to time.

IV.

QUALIFICATIONS FOR THE DEGREE.

The following are extracts from the Regulations respecting the qualifications of Candidates for the Degree in Medicine:

1st. No one shall be admitted to the Degree of Doctor of Medicine and Master of Surgery, who shall not either:—1st, have attended Lectures for a period of at least four six months' sessions in this University, or some other University, College, or School of Medicine, approved of by this University; or, 2ndly, have studied medicine during at least four years, and during that time have attended Lectures for a period of at least three six months' Sessions, either in this University, or some other University, College, or School of Medicine, approved of by this University.

2nd. Candidates for the Final Examination shall furnish Testimonials of attendance on the following branches of Medical Education, viz:—

Anatomy. *Chemistry.* *Materia Medica and Pharmacy.* *Institutes of Medicine.* *Principles and Practice of Surgery.* *Midwifery and Diseases of Women and Children.* *Theory and Practice of Medicine.* *Practical Anatomy.* *Clinical Medicine.* *Clinical Surgery.*	*Of which two Courses will be required of six months' duration.*
Medical Jurisprudence.	*Of which one Course of six months' or two Courses of three months' will be required.*
Practical Chemistry. *Botany or Zoology.* *Hygiene.*	*Of which one Course will be required of three months' duration.*

And a Course of not less than twenty-five Demonstrations upon Microscopic Anatomy, Physiology, and Pathology.

Provided, however, that Testimonials equivalent to, though not precisely the same as those above stated may be presented and accepted.

3rd. The Candidate must give proof by ticket of having attended during eighteen months the practice of the Montreal General Hospital, or that of some other Hospital approved of by this University, and have compounded medicines for six months.

4th. He must also give proof by ticket of having attended for at least six months the practice of the University or other Lying-in-Hospital approved of by this University, and of having attended at least six cases of accouchement.

5th. No one shall be permitted to become a Candidate for examination who shall not have attended at least one Session of this University, and one full course of all the branches included in its curriculum.

6th. Courses of less length than the above will only be received for the time over which they have extended.

7th. Every Candidate for the Degree must, on or before the fifteenth of February, present to the Dean of the Medical Faculty testimonials of his qualifications, entitling him to an examination, and must at the same time deliver to the Dean of the Faculty the following Certificate :—

MONTREAL,———18—

I, the undersigned, being desirous of obtaining the Degree of Doctor of Medicine and Master of Surgery, do hereby declare that I have attained the age of twenty-one years, or (if the case be otherwise), that I shall have attained the age of twenty-one years before the next graduation day, and that I am not (or shall not be at that time) under articles as a pupil or apprentice to any Physician, Surgeon, or Apothecary. (Signed,) A. B.

8th. The trials to be undergone by the candidate shall be such as referred to under Section V.

9th. The following Oath or affirmation, will be exacted from the Candidate before receiving his degree :

SPONSIO ACADEMICA.

In Facultate Medicinæ Universitatis.

Ego, A———B———, Doctoratus in Arte Medica titulo jam donandus, sancto coram Deo cordium scrutatore, spondeo ;—me in omnibus grati animi officiis, erga hanc Universitatem ad extremum vitæ halitum, perseveraturum, tum porro, artem medicam, caute, caste et probe exercitaturum ; et quoad in me est, omnia ad ægrotorum corporum salutem conducentia, cum fide procuraturum ; quæ denique, inter medendum, visa vel audita silere conveniat, non sine gravi causa vulgaturum. Ita præsens mihi spondenti adsit Numen.

10th. The Fee for the Degree of Doctor of Medicine and Master of Surgery shall be twenty dollars, to be paid by the successful candidate immediately after examination, together with a Registration fee of one dollar.

11th. The money arising from the fees of Graduation, as well as those of Enregistration, shall be applied to the enlargement of the Medical Library and Museum, and to defraying their expenses.

V.

EXAMINATIONS.

In each class a weekly examination is held to test the progress of the Student ; and in addition two or three written examinations are given throughout the Session.

The examinations at the close of each Session are arranged as follows:

1st Year—Sessional Examination.

ANATOMY.—Bones, Ligaments, Muscles, Viscera.

PHYSIOLOGY.—The Tissues, Blood, Circulation, Respiration, Digestion.

CHEMISTRY.—*Chemical Physics.*—Molecular Forces; Heat, Light, Electricity, and Magnetism.

Chemical Philosophy.—Laws of Combination; Nomenclature; Symbolic Notation, Classification of Elements.

MATERIA MEDICA.—Preparation, Characters, and Adulterations of Medicines.

PRACTICAL ANATOMY.—Bones, Ligaments, Muscles, Viscera.

BOTANY.

2nd Year—Primary, Pass Examination.

ANATOMY.

PRACTICAL ANATOMY.

PHYSIOLOGY.

CHEMISTRY.

PRACTICAL CHEMISTRY.

MATERIA MEDICA.

3rd Year—Sessional Examination.

MEDICAL JURISPRUDENCE WITH TOXICOLOGY.

HYGIENE.*—

MEDICINE.—Classification of Diseases, Pathology of Zymotic diseases. Continued, periodical and eruptive fevers. Constitutional diseases. Diseases of Kidney.

SURGERY.—Surgical Pathology, Wounds, Fractures, Dislocations.

MIDWIFERY.—Organs of generation of the female, and changes in them which result from conception. Signs of Pregnancy—Diseases of Pregnancy—Pelvis and its deformities.—Mechanism of Labor.

*—May be taken at the end of the Second Year.

4th Year—Final Pass Examination.

MEDICINE.
SURGERY.
MIDWIFERY.
CLINICAL MEDICINE.
CLINICAL SURGERY.
MEDICAL ANATOMY.
SURGICAL ANATOMY.

By means of the above arrangement a certain definite amount of work must be accomplished in each year an equitable division is made between the Primary and Final branches.

It was not thought advisable that Students should *pass* finally on important subjects of the Primary branches at the end of the first year, hence the second year examination embraces the whole range of the Primary subjects, and the same holds good for the Final branches in the 3rd and 4th Year, with the exception of Medical Jurisprudence and Hygiene, which may be finally passed at the end of the 3rd Year.

The Sessional Examinations at the close of the 1st and 3rd Years are compulsory upon all Students, and they will be rated according to merit.

With regard to the Primary Examination at the end of the 2nd Year, it remains optional with the Student whether he passes in all the branches or leaves two for the 3rd Year. In any case, Chemistry and one other must be taken at the close of the 2nd Year.

VI.

MEDALS AND PRIZES.

1st. The Holmes Gold Medal, awarded to the Student of the graduating class who receives the highest aggregate number of marks for the best examinations, written and oral, in both Primary and Final Branches.

2nd. A prize in books awarded for the best examination, written and oral, in the Final Branches. The gold medallist is not permitted to compete for this prize.

3rd. A prize in books awarded for the best examination, written and oral, in the Primary Branches.

4th. The Sutherland Gold Medal, awarded for the best examination in Theoretical and Practical Chemistry, together with creditable examination in the Primary Branches.

A prize in books for the best examination in Practical Anatomy.

A prize in books for the best examination in Botany, and a prize for the best Collection of Plants.

VII.

FEES.

Lectures.

Practice of Medicine	one course	$12.00
Clinical Medicine	"	12.00
Surgery	"	12.00
Clinical Surgery	"	12.00
Obstetrics and Gynæcology	"	12.00
Medical Jurisprudence	"	10.00
Anatomy	"	12.00
Institutes of Medicine (Physiology & Pathology)	"	16.00
Chemistry	"	12.00
Chemistry, Practical	"	12.00
Practical Anatomy	"	10.00
Hygiene	"	6.00
Botany and Zoology	"	5.00
Matriculation	"	5.00
Enregistration, (each Session)		4.00
Degree		20.00
Registration of Degree		1.00

HOSPITAL FEES.

Montreal General Hospital.

Six months	$ 8.00
Twelve months	12.00
Perpetual	20.00

Lying-in-Hospital.

Six months	8.00
Summer Session	**10.00**
Practical Histology, (Microscopes and reagents provided)	15.00

Any Student after having paid the fees and attended two courses of any class, shall be entitled to a perpetual ticket for that class, except the following:—Practical Anatomy, Practical Histology and Practical Chemistry.

N.B.—All Fees are payable strictly in advance.

VIII.

TEXT BOOKS.

ANATOMY.—Gray, Wilson, Sharpey and Quain.

PRACTICAL ANATOMY.—Heath's and Ellis' "Dissectors," Holden's Dissector and Landmarks.

CHEMISTRY.—Fownes, Miller, Roscoe.

PRACTICAL CHEMISTRY.—Odling, Galloway, Fresenius.

MATERIA MEDICA.—Pereira's Manual by Farre, Bently and Warrington.

INSTITUTES OF MEDICINE.—*Physiology*.—Foster, (Am. Edit.) Kirke's Hand-Book, Dalton, Huxley. *Pathology*.—Green, Jones & Sieveking, (by Payne) Virchow on Post-Mortems, Orth's Compendium.

PRACTICAL HISTOLOGY.—Rutherford, Schafer.

SURGERY.—Holmes' Surgery, Erichsen, Druitt, Bryant.

PRACTICE OF MEDICINE.—Aitken, Wood, Watson, Roberts, DaCosta, Flint.

MEDICAL JURISPRUDENCE.—Taylor's Jurisprudence, Guy and Ferrier's Forensic Medicine, Woodman & Tidy's Handbook, Maudsley on Insanity, Shepherd's Lectures on Madness.

MIDWIFERY.—Churchill, Ramsbotham, Cazeaux, Leishman, Playfair.

HYGIENE.—Parks, Hammond, Wilson.

IX.

MUSEUM.

Most of the usual Pathological Specimens are collected here, obtained from Hospital and private practice. They are largely used in illustrating the lectures on Medicine and Surgery. There are also wax and papier-mache models.

Graduates of the University are invited to contribute specimens.

X.

LIBRARY.

This comprises between four and five thousand volumes, including all the standard text-books and works of reference, together with complete files of the leading periodicals. Students may obtain books on making a deposit of $4.00, which is refunded on returning the volumes.

XI.

McGILL MEDICAL SOCIETY.

This Society, composed of enregistered Students of the Faculty, meets once a week during the Summer Session, and fortnightly during the winter, for the reading of papers and the discussion of medical subjects. It is presided over by a physician chosen by the members.

A reading room has been established in connection with the Society, in which the leading English and American medical journals are on file.

XII.

COST OF LIVING, &c.

This will, of course, vary with the tastes and habits of the Student, but the necessary expenses need not exceed those in smaller towns. Good Board may be obtained from $14 to $20 per month. A list of Boarding-houses is prepared annually by the Secretary of the University, and may be procured from the Janitor at the Medical College.

XIII.

HOSPITALS.

MONTREAL GENERAL HOSPITAL.

The Montreal General Hospital affords ample means for the instruction of Students in Clinical Medicine and Surgery. The daily number of beds occupied by patients averages from 140 to 150, and during epidemic visitations has reached a much higher number. The

Governors have also erected a Hospital for Children, contiguous to the Reid Wing of the present building. The Students have thus an opportunity of becoming familiar with nearly all the diseases of suffering humanity, and with the peculiarities imparted to them by infancy, adolescence, maturity and declining age.

The large number of out-door patients that are treated in the Hospital, averaging from sixty to seventy daily—supply illustrations of most of the diseases of infants and children, of very many of the eye and skin, and of those chronic and ill-defined ailments which, as they do not require admission to the wards of a hospital, would not otherwise come under the observation of the Student, although, on account of their variety and frequency, they are of great importance to the Physician.

The large number of patients affected with diseases of the eye and ear, now attending the out-door department, will afford Students ample opportunity to become familiar with all the ordinary affections of those organs, and to make themselves proficient in the use of the ophthalmoscope, and it is hoped that every Student will thus seek to gain a practical knowledge of this important branch of Medicine and Surgery. Operations are performed on the eye, by Dr. Buller, after the out-door patients have been seen, and Students are invited to attend the same, and as far as practicable to keep such cases under observation so long as they remain in the Hospital.

The shipping contributes many examples of accidents and surgical cases.

Clinical Clerks to both medical and surgical wards are appointed every three months, and each one during his term of service conducts, under the immediate direction of the Clinical Professors, the reporting of all cases in the ward allotted him. The holding of one of these offices is found to be of the greatest possible advantage to Students, as affording the most real *practical* training for his future professional life. They will be awarded on application at the end of each Session to final Students of that year, in order of their standing in the primary examination.

Dressers are also appointed to the Surgical wards and to the Out-door Department. For these appointments application is to be made to the Professor of Clinical Surgery, and to the Out-door attending Physicians.

The Operating Room (used also for a lecture room) is so constructed as to enable the Students to obtain a good view of the operations.

MONTREAL DISPENSARY.

ST. ANTOINE STREET.

About 10,000 patients yearly are treated at this Institution. The cases are of great variety, comprising a large number of pulmonary affections and children's diseases. Minor operations are of daily occurrence, and excellent practice is afforded in the application of splints and bandages. The attending Physicians furnish Students with all possible facilities. The hours of attendance are from 12–2 daily.

UNIVERSITY LYING-IN HOSPITAL.

This is under the direction of the Professor of Midwifery. Students who have already attended one course of his lectures, are furnished with cases in rotation; they are advised to attend this Institution as much as possible during the summer, when, since there are as many patients and not so many pupils as in winter, a larger proportion of cases falls to the share of each. Moreover, in this way more attention can be given to their duties during the winter.

The Assistant to the Professor of Midwifery attends each case, and gives instruction to the students in the methods of examination and the diagnosis of presentations.

UNIVERSITY DISPENSARY FOR DISEASES OF WOMEN.

Clinical instruction to Senior Students will be given thrice weekly at this Institution, 107 St. Urbain Street.

XIV.

PAST SESSION.

The total number of students enregistered in this Faculty during the past year was 166, of whom there were, from—

Ontario,	75,	New Brunswick,	8
Quebec,	56,	P. E. Island,	4
Nova Scotia,	2,	Newfoundland,	1,
Manitoba,	3,	West Indies,	1,
United States,	16.		

The following gentlemen, 36 in number, have passed their Primary Examination on the following subjects; Anatomy, Practical Anatomy, Chemistry, Practical Chemistry, Materia Medica and Pharmacy, Institutes of Medicine and Botany or Zoology. Their names and residences are as follows:

NAME.	RESIDENCE.
Burland, W. B.	Montreal.
Campbell, Lorne	Montreal.
Christie, Edmund	Lachute, Q.
Cormack, Wm	Guelph, O.
Carson, J. H.	Port Hope, O.
Dawson, Rankine, B.A.	Montreal.
Dunlop, A. H.	Pembroke, O.
Duncan, W. T.	Granby, Q.
Grant, J. A., B.A.	Ottawa, O.
Gordon, Chas. M.	Ottawa, O.
Harvie, J. B.	Ottawa, O.
Houston, D. W.	Belleville, O.
Hurdman B. F. W.	Aylmer, Q.
Klock, R. H.	Aylmer, Q.
Lunam, H., B.A.	Litchford, Q.
McDonald, A.	Paisley, O.
McLean, T. M.	Perth, O.
McNulty, Michael	Iroquois, O.
Mewburn, F. H.	Drummondville, O.
Moore, William	Owen Sound, O.
O'Keefe, H.	Lindsay, O.
Ogden, H. V., B.A.	St. Catharines, O.
Poole, H. E.	Wakefield, Q.
Reynolds, T. W.	Brockville, O.
Ross, James, B.A.	Dewittville, Q.
Shaver, W. H.	Wales, O.
Struthers, A. D.	Philipsburg, Q.
Shaw, Alex	Seaforth, O.
Stephen, Wm.	Montreal. Q.
Shanks, J. C.	Huntingdon, Q.
Shufelt, W. A.	Brome, Q.
Thornton, H. W., B.A.	Montreal, Q.
Trueman, J. E.	Sackville, N.B.
Vanier, Philias	St. Martin, Q.
Wagner, G. C.	Dickinson's Landing, O.
Williams, Joseph	London, O.

The following gentlemen, 30 in number, have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from this University. These exercises consist in examinations, both written and oral, on the following subjects: Principles and Practice of Surgery, Theory and Practice of Medicine, Obstetrics and Diseases of Women and Children, Medical Jurisprudence and Hygiene,—and also Clinical Examinations in Medicine and Surgery conducted at the bedside in the Hospital:

NAME.	RESIDENCE.
Ayer, Nehemiah, M.A	Woodstock, N.B.
Church, F. W	Aylmer, Q.
Cahalan, James	Wyandotte, Mich.
Cowley, D. K	Ottawa, Ont.
Dibblee, G. O	St. Stephen, N.B.
Edwards, J. S	London, Ont.
Heard, C. de W	Charlottetown, P.E.I.
Henderson, And	Montreal, Que.
Inksetter, D. G	Copetown, Ont.
Logan, Robert	Iona, Mich.
McLaren, D. C., B.A	Montreal, Q.
McKenzie, B. E., B.A	Aurora, Ont.
McEachran, Wm	Montreal, Q.
McDonald, R. C	Perth, Ont.
McDonald, J. A	Panmure, P.E.I.
McNulty, M	Iroquois, Ont.
Maas, R. J	Negaunee, Mich.
Mignault, L. D., B.A	Montreal, Q.
O'Callaghan, T. A., B.A	Worcester, Mass.
Pinsoneault, B	Montreal, Q.
Pringle, A. F	Cornwall, Ont.
Poole, H. E	Wakefield, Q.
Pulford, F. W	Winnipeg, Man.
Riordan, B. L	Port Hope, Ont.
Ruttan, A. M	Napanee, Ont.
Ross, G. T	Montreal, Q.
Stewart, J. O	St. Anicet, Q.
Small, H. B	Ottawa, Ont.
Smiley, J	St. Lambert, Q.
Stevenson, Hans	Wakefield, Q.

Of the above-named gentlemen Mr. R. C. McDonald is under age. He has, however, passed all the examinations, and fulfilled all the

requirements necessary for graduation, and only awaits his majority to receive his degree.

The following have passed in Medical Jurisprudence :—

Ch. N. Beer,	W. L. Gray,	R. F. McDonald,
P. Cameron,	J. B. Harvie,	K. McKenzie,
J. H. Carson,	H. E. Heyd,	F. H. Mewburn,
Wm. Cormack,	J. W. Higginson.	W. J. Musgrove,
A. H. Dunlop,	J. J. Hunt,	T. W. Reynolds,
E. C. Fielde,	G. E. Josephs,	E. J. Rogers,
H. D. Fraser,	W. A. Lang,	J. W. Ross,
C. M. Gordon,	E. J. Laurin,	J. C. Shanks,
	A. D. Struthers,	G. C. Wagner,

The following have passed in Anatomy :—

E. C. Bangs,	A. M. Cattanach,	A. J. Rutledge,
W. D. Bell,	Hugh Cale,	W. E. Thompson,
C. O. Brown,	T. J. P. O'Brien.	

The following have passed in Chemistry :—

E. C. Bangs,	A. M. Cattanach,	T. J. P. O'Brien,
C. O. Brown,	Hugh Gale,	A. J. Rutledge,
J. W. Cameron,	R. J. B. Howard,	

The following have passed in Materia Medica :—

J. W. Cameron,	Hugh Gale,	Chs. B. Hanvey,
	R. C. McCorkill.	

The following have passed in the Institutes of Medicine :—

E. C. Bangs,	Chs. B. Hanvey,	W. J. Prendergast, B.A.,
A. M. Cattenach,	T. J. P. O'Brien,	Freeman Tupper.

The following have passed in Practical Anatomy.

C. O. Brown,	A. M. Cattenach,	T. J. P. O'Brien.

The following have passed in Botany :—

CLASS I.

C. E. Cameron, J. Gray, }	Equal.	C. E. Allen,	H. A. Hutchins,
		N. McE. Scott,	J. S. Lathern,
J. B. Loring,		A. Stewart,	L. D. Ross,
G. E. Cook,		F. E. Muckey,	J. A. Hopkins.

CLASS II.

T. W. Grange,	H. J. Clarke,	* Alex. Glass,
J. E. Mehan,	Jas. Park,	* J. M. Skully,
G. B. Rowell,	J. C. Bowser,	H. J. Harrison,
L. J. Gardner,	* W. Wardle,	J. C. McRae.
* A. J. Chandler,	J. E. Case,	

CLASS III.

A. J. Rutledge,	O. Martel,	H. M. Comstock,
A. Elliott,	* D. E. Campbell,	E. S. Wood,
J. J. Maher,	H. Dearden,	P. N. Kelley,
G. K. Sherriff,	C. O. Brown,	C. Fairbanks.
J. R. Johnson,	G. A. Sihler,	

* Marked thus are Students of the Veterinary College.

XV.

MEDALS, PRIZES AND HONOURS.

THE HOLMES GOLD MEDAL was awarded to J. A. McDonald, Panmure, P.E.I.

THE PRIZE FOR THE FINAL EXAMINATION was awarded to H. B. Small, of Ottawa.

THE PRIZE FOR THE PRIMARY EXAMINATION was awarded to James Ross, B.A., Dewittville, Q.

THE SUTHERLAND GOLD MEDAL was awarded to H. W. Thornton, B.A., Montreal.

The following gentlemen, arranged in the order of merit, deserve honourable mention :—

In the Final Examination, Messrs. Stevenson, Henderson and Mignault, B.A.

In the Primary Examination, Messrs. H. V. Ogden, B.A., R. Dawson, B.A., W. Moore, H. W. Thornton, B.A., and T. W. Reynolds.

PROFESSORS' PRIZES.

BOTANY.—First Prize, C. E. Cameron, of Montreal, and J. Gray, Brucefield, Ont., equal.

PRACTICAL ANATOMY.—Demonstrator's Prize, awarded to James Ross, B.A., Dewittville, Q.

McGill University.—Faculty of Medicine.

ORDER OF LECTURES, WINTER SESSION 1880–81.

A.M.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Anatomy.	Hygiene.
	Medical Jurisprudence.	Ophthalmic Clinic.	Medical Jurisprudence.	Ophthalmic Clinic.	Medical Jurisprudence.	Botany.
10	Surgery.	Surgery.	Surgery.	Surgery.	Surgery.	
	Practical Chemistry.	Botany.	Practical Chemistry.	Botany.	Practical Chemistry.	Pathological Demonstration
11	Midwifery.	Midwifery.	Midwifery.	Midwifery.	Midwifery.	
	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	Out-door Patients. Montreal General Hospital.	
P.M. 12.45	Clinical Medicine, Wards.	Clinical Surgery, Wards.	Clinical Lecture, Medicine.	Clinical Medicine, Wards.	Clinical Surgery, Wards.	Clinical Lecture, Surgery.
1.45			Clinical Surgery, Wards.			Clinical Medicine, Wards.
2	Materia Medica.	Materia Medica.	Materia Medica.	Materia Medica.	Materia Medica.	Histological Demonstration, 1st year.
3	Physiology.	Physiology.	Physiology.	Physiology.	General Pathology.	Physiological Demonstration 2nd year.
4	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	Practice of Medicine.	
5	Chemistry.	Chemistry.	Chemistry.	Chemistry.	Chemistry.	
8.10	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	Practical Anatomy.	

☞The Demonstrator's Hours in the Dissecting Room are from 10–12 a. m., 8–10 p. m.

☞Autopsies are performed at the General Hospital between 12 & 2 p. m. Due notice is given to the students.

90

Faculty of Law.

THE PRINCIPAL (Ex-officio.)

Professors :—ABBOTT.
LAFLAMME.
CARTER.
KERR.
TRENHOLME.
WURTELE.

Professors :—RAINVILLE.
ARCHIBALD.
LAREAU.
HUTCHINSON.
ROBIDOUX.

Dean of the Faculty.—Hon. J. J. C. ABBOTT, Q.C., D.C.L.

Acting Dean.—Professor WM. KERR, Q.C., D.C.L.

Registrar of the Faculty.—J. S. ARCHIBALD, M.A., B.C.L.

Corporation Examiners for Degrees.—Professors N. W. TRENHOLME, M.A., B.C.L., and EDMOND LAREAU, B.C.L.

Matriculation Examiners of the Faculty.—Professors J. S. ARCHIBALD, M.A., B.C.L., and EDMOND LAREAU, B.C.L.

The Classes in Law will commence on Friday the First of October, 1880, and will extend to March 31st, 1881.

The Examinations will be held in the William Molson Hall, McGill College Building, from 3 to 6 p. m., on the 10th, 11th, 14th, 15th, 16th, 17th and 18th days of March, 1881.

The Lecture Rooms of the Faculty are situated in the Molson's Bank Chambers, in St. James Street.

The complete course of study in this Faculty extends over three years; but it may be shortened to two years, when the student matriculates in the third year of his indentures.

Students who avail themselves of the privilege of attending two years only, will nevertheless be required to pass an examination in the subjects comprised in the three years' course.

Matriculated Students who do not take the whole course are classed as Partial Students, and are not entitled to proceed to the Degree of B. C. L.

Occasional Students will be received without matriculation, for attendance on any particular series of Lectures.

Students who have completed their course of three years,—or of two years, if they have commenced in the third year of their indentures,—and have passed a satisfactory examination, will be entitled, upon the certificate and recommendation of the Faculty, to the Degree of Bachelor of Civil Law.

COURSE OF STUDY.

FIRST YEAR.

Legal History	Professor LAREAU.
Civil Law :—	
Persons	Professor ROBIDOUX.
Property	
Ownership	
Roman Law :—	
Institutes of Justinian, B. I.	Professor TRENHOLME.
Gaius, C. I.	
Maine, Chapters I. to IV.	
Civil and Commercial Law :—	
Obligations	Professor WURTELE.
Civil Procedure :—	
Introduction	Professor HUTCHINSON.
Criminal Law	Professor ARCHIBALD.

SECOND YEAR.

Legal Bibliography	Professor LAREAU.
Civil Law :—	
Rents	
Transaction	
Suretyship	
Civil Law :—	
Usufruct	Professor ROBIDOUX.
Real Servitudes	
Gifts and Wills	
Substitutions	
International Law	Professor KERR.
Civil and Commercial Law :—	
Sales	
Roman Law :—	
Institutes of Justinian, B. II. and B. III. to Title 14	Professor TRENHOLME.
Gaius, Chaps. II. and III.	
Maine, Chapters V. to VIII.	
Commercial Law :—	
Partnership	Professor WURTELE.
Corporations	
Bills of Exchange	

Civil Procedure :— First Part	Professor HUTCHINSON. Professor ARCHIBALD.
Criminal Procedure and Election Law :—	

THIRD YEAR.

Civil Law :— Privileges and Hypothecs; Prescription; Imprisonment in Civil Cases	Professor LAREAU.
Civil Law :— Successions; Marriage Covenants; Dower	Professor Robidoux.
International Law; *Commercial Law :—* Carriage of Persons; Insurance; Bottomry and Respondentia	Professor KERR.
Roman Law :— Institutes of Justinian, B. II. from Title 14.. Maine, Chapters IX. and X.; *Civil Law :—* Mandate; Loan; Deposit; Pledge; *Evidence*	Professor TRENHOLME.
Commercial Law :— Merchant Shipping; Affreightment; Insolvency	Professor WURTELE.
Civil Procedure Second Part	Professor HUTCHINSON.
Criminal Procedure and Election Law	Professor ARCHIBALD.

FACULTY REGULATIONS.

1. Any person desirous of becoming a Matriculated Student, shall apply to the Dean of the Faculty for examination and entry in the Register of Matriculation, and shall procure a ticket of Matriculation and tickets of admission to the Lectures for each Session of the Course. (Students are requested to call on the Registrar who will furnish them with the necessary forms.)

2. Candidates for Matriculation shall pass an examination, satisfactory to the Faculty of Law, in Latin, French, English, Mathematics and Ancient and Modern History, and the books upon which such examination shall be had shall be from time to time fixed by the Faculty.

3. Students in Law shall be known as of the First, Second and Third Years, and shall be so graded by the Faculty. In each year, Students shall take the studies fixed for that year and those only, unless by special permission of the Faculty.

4. The Register of Matriculation shall be closed on the 1st of November in each year, and return thereof shall be immediately made by the Dean to the Registrar of the University. Candidates applying thereafter may be admitted on a special examination to be determined by the Faculty; and if admitted, their names shall be returned in a supplementary list to the Registrar.

5. Persons desirous of entering as Occasional Students shall apply to the Dean of the Faculty for admission as such Students, and shall obtain a ticket, or tickets, for the class or classes they desire to attend.

6. Students who have attended Collegiate courses of study in other Universities for a number of terms or sessions, may be admitted, on the production of certificates, to a like standing in this University, after examination by the Faculty.

7. All Students shall be subject to the following regulations for attendance and conduct:—

(1) A Class-Book shall be kept by each Professor and Lecturer, in which the presence or absence of Students shall be carefully noted; and the said Class-Book shall be submitted to the Faculty at a meeting to be held between the close of the lectures and the commencement of the examinations; and the Faculty shall, after examination of such class-book, decide which students shall be deemed to have been sufficiently regular in their attendance to entitle them to proceed to the examination in the respective classes.

(2) Punctual attendance on all the classes proper to his year is required of each student. Professors will note the attendance immediately on the commencement of their lectures, and will omit the names of Students entering thereafter, unless satisfactory reasons are assigned. Absence or tardiness, without sufficient excuse, or inattention or disorder in the Class-room, if persisted in after admonition by the Professor, will be reported to the Dean of the Faculty, who may reprimand the student or report to the Faculty, as he may decide. While in the building, or going to or from it, students are expected to conduct themselves in the same orderly manner as in the Class-rooms. Any Professor observing improper conduct in the Class-rooms, or elsewhere in the building, will admonish the student; and, if necessary, report him to the Dean.

(3) When Students are reported to the Faculty under the above rules, the Faculty may reprimand, report to parents or guardians, disqualify from competing for prizes or honours, suspend from classes, or report to the Corporation for expulsion.

(4) Any Student injuring the furniture or building, will be required to repair the same at his own expense, and will, in addition, be subject to such penalty as the Faculty may see fit to impose.

(5) The number of times of absence, from necessity or duty, that shall disqualify for the keeping of a Session shall each in case be determined by the Faculty.

(6) All cases of discipline involving the interests of more than one Faculty, or of the University generally, shall be reported to the Principal, or, in his absence, to the Vice-Principal.

8. At the end of every Session there shall be a general examination of all the Classes, under the Superintendence of the Professors, and of such other Examiners as may be appointed by the Corporation, which examination shall be conducted by means of printed questions, answered by the students in writing, in the presence of the Examiners. The result shall be reported as early as possible to the Faculty, which shall decide the general standing of the students accordingly.

9. Each Professor shall deliver at least two Lectures in each week. Each Lecture shall be of one hour's duration; but the Professors shall have the right from time to time to substitute an examination for any such Lectures.

10. No Student shall be considered as having kept a Session, unless he shall have attended regularly all the courses of Lectures, and shall have passed the Sessional Examinations to the satisfaction of the Faculty, in all the classes of his year.

11. The Faculty shall have the power, upon special and sufficient cause shown, to grant a dispensation to any Student from attendance on any particular Course or Courses of Lectures, but no distinction shall, in consequence, be made between the Examinations of such Students and those of the Students regularly attending Lectures. No Student shall pass for the degree of B. C. L. unless he has prepared a Thesis either in French or English which shall have been approved by the Faculty.

12. The subject of such Thesis shall be left to the choice of the Student, but it must fall within the range of study of the Faculty, and shall not exceed twenty pages of thirty lines each. Each Student shall on or before the first day of February forward such Thesis to the Registrar of the Faculty, marked with the *nom de plume* which he shall adopt, and accompanied with a sealed envelope, bearing the same *nom de plume* on it, and containing inside, his name and the subject of his Thesis, and the envelope shall be opened in presence of the Faculty after the final decision shall be given on the respective merits of the several Theses.

13. The Elizabeth Torrance Gold Medal, in the Faculty of Law, shall be awarded to the Student who being of the Graduating Class, having passed the Final Examination, and having prepared a Thesis of sufficient merit in the estimation of the Faculty to entitle him to compete, shall take the highest marks in a special Examination for the medal, which examination shall include the subject of Roman Law.

14. Every Candidate before receiving the Degree of B. C. L. shall make the following declaration:

Ego A.B. polliceor, me, pro viribus meis, studiosum fore communis hujus Universitatis boni, operamque daturum ut decus ejus ac dignitatem amplificem, et officiis omnibus ad Baccalaureatus in Jure Civili gradum pertinentibus fungar.

15. The fees eligible in this Faculty are as follows:

Matriculation Fee	$ 5 00
Sessional Fee by Ordinary Students	20 00
Sessional Fee by Occasional or Partial Students, for each course	5 00
Graduation Fee, including Diploma and Case	10 00

Matriculation and Sessional Fees must be paid on or before Nov. 1st, and if not so paid the name of the Student shall be removed from the books, but may be re-entered by consent of the Faculty, and on payment of a fine of not less than $3. Students already on the books of the University shall not be required to pay any Matriculation Fee.

16. Every Candidate for the Degree of D.C.L. in Course, under Chap. VIII., Section 4, of the Statutes of the University, shall be required to pass within four years from his graduation as B.C.L., such examination as shall be prescribed by the regulations of the Faculty of Law; unless he shall have graduated as a B.A. of this University, either in Course or *ad eundem*. And not less than two months before proceeding to the Degree of D.C.L, the Candidate shall deliver to the Faculty of Law twenty-five printed copies of a Thesis or Treatise upon a subject selected or approved by the Faculty; such Thesis to contain not less than twenty-five octavo pages of printed matter, and possessing such a degree of literary and scientific merit as shall in the opinion of the Faculty justify them in recommending him for that Degree. And in addition to the foregoing qualifications, the Candidate shall pay to the Secretary of the Faculty annually during term, for the retention of his name on the books of the Faculty, during the said period of twelve years, a fee of two dollars, to be added to the Library fund of the Faculty.

Except as regards the Thesis, this regulation applies only to those who have taken the degree of B.C.L., subsequently to October, 1873. The examination under the above rule is as follows:—

(1) *International Law*:—

Phillimore; Wharton, Conflict of Laws; Fœlix, Droit International Privé.

(2) *Roman Law*:—

Gaii Commentarii, IV.; Pauli Sententiæ; Pomponii Fragmentum de origine juris D. 1. 2.; Novellæ Justiniani, cxviii. cxxvii.; Ortolan, Institutes de Justinien, Vol. I.; Mommsen's History of Rome.

(3) *Constitutional Law*:—

Hallam, Constitutional History of England; May, Constitutional History of England; Mill, Representative Government; The British North America Act, and cases thereunder.

(4) *Philosophy of Law*:—

Ahrens, Cours de Droit Naturel; Austin, Jurisprudence; Markby, Elements of Law; Maine, Ancient Law.

(5) *Droit Civil et Commercial*:—

Pothier, Obligations, Vente et Communauté; Marcadé, Obligations, Vente et Communauté; Pardessus, Droit Commercial.

The Examination will be written and oral; and translation from the Latin, French or English texts, as well as familiarity with the subject, will be required.

University School Examinations.

1881.

UNDER THE SUPERINTENDENCE OF MCGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE.

FOR CERTIFICATES OF THE UNIVERSITY AND THE TITLE OF ASSOCIATE IN ARTS.

These Examinations are held in Montreal and at Lennoxville, and local centres may be appointed elsewhere on application to the Principal of either University, accompanied with satisfactory guarantee for the payment of necessary expenses.

The Examinations are open to Boys or Girls, under 18 years of age, from any Canadian School, under the following regulations:

Subjects of Examination.

1. These are divided into two Classes, (I) *Preliminary*, consisting of those in which every Candidate must pass; and (II) *Optional*, consisting of those in which the Candidate may have a choice.

2. The Preliminary subjects, with their values severally, are:—

English Reading	30	*Marks*
English Dictation	40	do
English Grammar (as in Morell or Smith)	50	do
Arithmetic (all the ordinary rules)	90	do
Geography (acquaintance with the maps of each of the four Continents, and of British North America)	50	do
British History (as in Collier), and *Canadian History* (as in Jeffers)	50	do

The Candidates will also be examined in the Gospels, unless objection be made thereto by their parents or guardians, and creditable answering in the same will be mentioned in the Certificate.

Additional marks, not exceeding 20, may be allowed in the Dictation paper, for quality of handwriting.

No candidate can pass unless he shall have obtained at least *one-third* of the total number of marks in each of the above subjects, except Reading and Dictation, in which *two-thirds* will be required.

3. The Optional subjects are divided into three sections as follows:—

(1) Languages.

Latin.

Grammar. Cicero, In Catilinam, Oratt. III. & IV. Virgil, Æneid, Bk. I., Vss. 1–304. Ovid, Fasti, Vss. 1–300.	150 marks.

Greek.

Grammar. Xenophon, Anabasis, Bk. V. Homer, Iliad, Bk. IV.	150 do

French.

Grammar. Extracts from Molière, in Darey's French Reader. Translation from English into French (Vicar of Wakefield, chaps. 1 and 2.)	100 do

German.

Grammar. Adler's Reader, Section II. Translation from German into English.	100 do

(2) Mathematics, Natural Philosophy, &c.

Geometry.

Euclid, I, II, III ..... 150 do

Algebra.

Elementary Rules, Involution, Evolution, Fractions, Simple Equations.	150 do

Plane Trigonometry.

Measurement of Angles, Trigonometrical Ratios of a single angle and of two angles, Complemental and Supplemental Angles, and the Solution of Right-angled Triangles.	100 do

Natural Philosophy.

Mechanics and Hydrostatics. (As in any ordinary School Text-Book.)	100 do

Geometrical and Freehand Drawing ..... 100 do

(3) English.

The English Language.

Philology (as in Smith's or Mason's Grammar and Peile's Primer). Trench's Study of Words.	100 do

English Literature.

English Literature, Primer by S. A. Brooke. Scott's Lady of the Lake. Milton's Paradise Lost, Books 1 and 2.	100 do

Additional Marks, not exceeding 50, may be allowed in the literature paper for quality of Composition.

History.—(As in Primers of Greece and Rome, and Collier's Great events).....100 marks.
Geography.—Physical, Political and Commercial.....100 do

Instead of passing in one or more subjects of the English Section, Candidates may, if they prefer it, pass in one or more of the following subjects :—

(4) Natural Science.

Zoology (as in Nicholson's Introductory Text-Book.).....100 do
Botany (as in Gray's "How Plants Grow.").....100 do
Geology (as in Dana's Text Book.).....100 do
Chemistry (as in Miller's Introduction to Inorganic Chemistry.)...100 do

General Regulations.

Every Candidate must pass in at least one, and not more than three, subjects in each of the Optional Sections.

No Candidate will be considered as having passed in any of the above Optional Subjects, unless he has obtained *at least one-third* of the total number of Marks obtainable in that subject.

Any Candidate who passes in more than one subject of any section, and who in at least one of those subjects obtains *more than half* the total number of Marks, will be entitled to a Certificate of creditable answering in that subject.

The total number of Marks gained by every Candidate, including both Preliminary and Optional Subjects, shall be added up, and the Candidates arranged in a printed list, at the close of the Examination, in the order of these totals. No Marks in any subject shall be counted unless the Candidate has gained at least the minimum number of Marks in that subject.

Candidates passing in at least two languages of Section 1st, one of them being Latin or Greek, shall receive Senior certificates. Candidates passing in any one Language of Section 1st, may receive Junior certificates. Candidates who have fulfilled the requirements for the Junior certificate, and have also taken at least half the Marks in Arithmetic, Geometry, and Algebra, and have passed in Trigonometry and in one Natural Science subject, or in two Modern Languages, shall be entitled to Senior certificates.

Candidates taking Senior Certificates shall be termed Associates in Arts.

Every Candidate shall present a certificate of character, and also a certificate from his parent or guardian that his age on the first day of the examination does not exceed eighteen years.

In the case of those who pass in Latin, Greek, English, Algebra and Geometry. the examination will be received as the Matriculation Examination in the Faculties of Arts of the two Universities. In the case of those who have passed in Geometry, Algebra and English, the examination will be received for Matriculation in the Faculty of Applied Science of McGill University.

Candidates who fail, or who may be prevented by illness from completing

their examinations, may come up at the next examination without extra fee, unless in the interval they have become disqualified by age, this disqualification not to apply in cases of illness duly certified by medical authority.

The Examinations will be held in the following order :—

1. *Preliminary Subjects.*—(May 18.) Geography ; Gospels. (19) English Grammar; Reading, Dictation ; (20) Arithmetic ; British and Canadian History.

2. *Optional Subjects.*—(May 23) Geometry ; French. (25) Latin, Natural Science. (26) Greek ; German. (27) English Literature ; History. (30) Algebra ; Natural Philosophy, Trigonometry. (31) English Language; Geography.

Hours of Examination, 9 a.m. and 2 p.m.

Lists of the names, ages, and Optional Subjects to be taken by the candidates, together with the fee of $4, must be transmitted to the Secretary of McGill University on or before May 1st. (Blank forms and copies of the Regulations will be furnished on application.)

Regulations for the Higher Examination of Women.

UNDER THE SUPERINTENDENCE OF McGILL UNIVERSITY, MONTREAL, AND THE UNIVERSITY OF BISHOP'S COLLEGE, LENNOXVILLE.

Women over sixteen years of age, who have already received the Senior or Junior Certificates of the University, or who present certificates of education and examination accepted as equivalent by the Examiners, may enter on the following Examinations, and, on passing the same, shall be entitled to Certificates as Senior Associates in Arts.

The Examinations will be held at the same time and in the same manner with those for School Certificates, and local centres may be established on similar conditions.

The Examinations are divided into Imperative and Optional, as follows :—

I. IMPERATIVE.

These subjects consist of the following groups, in each of which every candidate will be required to take at least one-third of the number of marks.

(a) Latin or Greek, with History.

Latin and History.—

Livy :—Book IX., Chaps. 1 to 25, inclusive.
Cicero :—Pro Murena.
Virgil :—Æneid, Book VI.
Latin Prose Composition.—Text-book :—Dr. Smith's Principia Latina, Parts IV. and V.
History of Rome.—Text-book :—Liddell's History of Rome.

——200 marks.

Greek and History.—

Homer :—Odyssey, Book XII.
Xenophon :—Hellenics, Book I.
Demosthenes :—Philippics, I. and II.
History of Greece.—Text-book :—Dr. Smith's History of Greece.

——200 marks.

Candidates may take either Greek or Latin.

(b) Mathematics.

Arithmetic.
Euclid, Bks. I. II. III. IV., Defs. of Bk V., Bk. VI., omitting Props. 27, 28, 29.

Algebra, inclusive of Surds, Quadratic Equations and Progressions.
Plane Trigonometry, including the measurement of Heights and Distances, with the nature and use of Logarithms.

——200 marks.

(In the last subject, Candidates are referred to Galbraith and Haughton's Trigonometry, or similar text-books.)

(c) Logic and English.

Logic, as in Whately's Logic, Book II. and III.
Anglo-Saxon, as in Shute's Manual.
Philology, as in Earle.
Green's Short History of the English People.

——200 marks.

II. OPTIONAL.

In addition to the above, Candidates must pass in at least one, and not more than three, of the following subjects, creditable answering in which will be mentioned in their certificates :—

(a) Chemistry.

Inorganic, as in Wilson, with some knowledge of Chemical Manipulation.

(b) Botany.

As in Gray's Text-book, with some knowledge of Canadian Botany.

(c) Mathematical Physics.

Mechanics (Statics and Dynamics) ; Hydrostatics.
(Candidates are referred to Galbraith and Haughton's Mechanics and Hydrostatics, Hamblin Smith's Statics and Hydrostatics, or similar Text-books.)

(d) Experimental Physics.

Any two of the following :—Heat, Light, Electricity and Magnetism, Sound.
(Candidates will be expected to shew in the Examinations that they have made the experiments themselves or have seen them made. For range of study, Candidates are referred to Ganot's Elementary Treatise on Physics, translated by Atkinson.)

(e) Biology and Geology.

Classification of Animals and Plants, as in Dawson's Handbook and Gray's Text-book.
Geology, as in Dana's Manual.
Palæontology, as in Nicholson's Manual.
A practical knowledge of Minerals, Rocks and Fossils will be expected.

(f) Mental Philosophy.

Thomson's Outlines of the Laws of Thought.
Murray's Outline of Hamilton's Philosophy, Introduction and Part I. to the end of Chapter V.

(g) English Literature and Ancient History.

Chaucer—Prologue to Knight's Tale.

Shakspere—Macbeth and Merchant of Venice.

Ancient History of the East—Lenormant and Chevallier, Vol. I., Books 1 and 2. Philip Smith's Manual.

History of Greece or Rome (if not taken in the Imperative), as in Smith and Liddell.

(h) French Language and Literature, with Ancient History.

French Syntax, as in De Fivas or Noel et Chapsal.

Molière, les Femmes savantes.

Racine, les Plaideurs.

Souvestre, un Philosophe sous les toits.

French Literature of the 17th and 18th centuries, as in Nisard, Précis de l'Histoire de la Littérature française.

Translation from English into French.

With History, as under (*g*).

(i) German Language and Literature, with Ancient History.

General Questions on Grammar (Schmidt's German Guide, Parts 1–3.)

Account of the Life and Principal Works of Goethe and Schiller, with a special study of Schiller's 'Maria Stuart.'

Adler's Progressive Reader, Nos. 5, 6, 8, 9, 12, 14 of Sec. IV.

Translation from English into German.

With History, as under (*g*).

(k) Greek or Latin with History.

If not taken in the Imperative part of the Examination.

In the Optional Subjects, the Examinations held under the Ladies' Educational Association of Montreal, when held by Professors or Examiners of either University, and certified in writing by them as equivalent to subjects stated above, may be accepted by the Examiners in any subject or portion of a subject.

In any of the Optional Subjects, Candidates must receive at least one-third of the marks in order to pass, and at least one half to receive mention of creditable answering.

(It is understood that the Optional Subjects will be reckoned as approximately of equal value.)

Successful Candidates will be arranged in the lists in the order of the aggregate of the marks which they have obtained in the whole of the Imperative Subjects and one only of the Optional.

The Fee for the Examination is eight dollars, and must be paid before the Examination. In case of failure, the Candidate may come up at the next Examination without additional fee.

Candidates are required to state in writing to the Secretary of either University the Optional Subject or Subjects in which they propose to be examined, at least one month before the date of the Examination.

Extracts from the Regulations of the University.

REGULATIONS FOR AFFILIATED SCHOOLS.

1. Any High School, Academy or Collegiate Institute, sending up successful Candidates for the examinations for Associate in Arts, shall be recognized as an Affiliated School. But on any such School failing to send up Candidates at two successive examinations, the affiliation shall cease.

2. Any High School, Academy, or Collegiate Institute, may be admitted to affiliation by resolution of the Corporation, on application, provided that such application be accompanied with statements as to finances, teachers and course of study satisfactory to the Corporation, opportunity being also given to the Faculty of Arts and Faculty of Applied Science to make representation thereon.

3. The course of study at such Schools shall be such as would enable their pupils to pass the Matriculation Examination for the Second Year in Arts, or the Second Year in Applied Science, and returns of the course of study in each school shall be sent to the Corporation annually on or before the 1st January.

4. Any School so affiliated may apply to the Principal for copies of Matriculation papers in Arts or Applied Science, who shall thereupon endeavour to secure the services of a Sub-examiner, or Sub-examiners in the locality of the School, and shall send the examination papers under seal to such Sub-examiner or Sub-examiners. The answers when returned shall be handed to the Examiners of the Faculty concerned, and on their favourable report the Candidates shall be entered as Matriculated Students.

5. Any pupil of an affiliated School presenting a certificate of having passed through the course of such school and of having also passed the Matriculation Examination of any University sanctioned by regulation of the Faculty of Arts or the Faculty of Applied Science, approved by the Corporation, may be matriculated in either Faculty without further examination.

6. Under the above regulations no Candidate shall be admitted to any standing higher than that of entrance into the Second Year of Arts or of Applied Science.

7. No expense shall be incurred in Local Examinations, beyond that of Examination papers and postage, and all Students entering from affiliated Schools shall pay the usual matriculation fee.

8. In event of any affiliated School sending up three successful Candidates for Matriculation in Arts, the Candidate who passes the best examination shall be entitled to an exemption from fees to the amount of $20 annually while

attending McGill College, and for every additional three Candidates an additional exemption shall be given. In case the Candidates are examined by the University Examiners the above exemptions shall be given on their reports, otherwise on certificate of the Schools.

AFFILIATED SCHOOLS.

The following are recognized as Affiliated Schools, under the above Regulations.

Prince of Wales College, Charlottetown, P. E. I.
Collegiate Institute, Hamilton, Ontario.
Canadian Literary Institute, Woodstock, Ontario.
The High School of Montreal.
The Bishops' College School, Lennoxville, Q.
The Girls' High School, Montreal.
The Lachute College.
The Dunham Academy.

ACADEMIC DRESS.

1. Undergraduates shall wear a plain black stuff gown, with round sleeve looped up at the elbow.

2. Bachelor of Arts :—black gown of Prince's stuff, with full sleeve looped at elbow, and terminating in a point :—hood, black, lined with fur, and edged 1½ inch deep with crimson.

3. Bachelor of Applied Science :—the same gown as Bachelors of Arts :—hood, rich mauve, lined with rabbit skin.

4. Master of Arts :—black gown, as above, with long sleeve with semi-circular cut at the bottom :—hood, black silk lined with crimson, and edged 1½ inch deep with white.

5. Master of Engineering and Master of Applied Science :—same gown as Masters of Arts :—hood, rich mauve, lined with white silk.

6. Bachelor of Civil Law :—black silk gown ornamented on sleeves and front edgings :—hood, lilac silk, lined with white silk, edged 1½ inch deep with crimson.

7. Doctor of Civil Law :—for undress, the same gown as the Bachelor of Civil Law :—hood, scarlet cloth, lined with pink silk, and edged 1½ inch deep with black velvet.

8. Doctor of Laws :—for undress, the same gown as the Master of Arts :—hood, scarlet cloth, lined with pink silk, and edged 1½ inch deep with white satin.

9. Doctor of Medicine :—same gown as the Doctor of Civil Law, but no ornament on sleeves or front :—hood, scarlet cloth, lined with pink silk and edged with purple.

10. Doctors of Divinity :—black silk gown with full bag sleeve :—hood, scarlet cloth, lined with the same.

11. Doctors of Laws, Doctors of Civil Law, and Doctors of Medicine shall be entitled to wear a scarlet robe similar to that of the University of Cambridge, for full dress at Convocations.

GENERAL UNIVERSITY MEETINGS AND OTHER MEETINGS IN UNIVERSITY BUILDINGS.

1.—In the case of all General Meetings appointed by the University, the Principal, or, in his absence, the Vice-Principal, shall have power to make such arrangements and to secure such assistance as he may deem necessary for the preservation of order, subject to the approval of the Governors as to any expense that may be involved.

2.—The Principal may, if necessary, call upon the Deans of the several Faculties, or, in their absence, any of the Professors of such Faculties, to co-operate with him in the preservation of order.

3.—In case of any disorder at such meetings, the Principal and the Deans of the Faculties shall form a court of inquiry to ascertain the offenders; and they may either remit the dealing with such offenders to the Faculties to which they belong, or may report to the Corporation.

4.—The use of any building or room of the University shall not be granted by the Principal or Faculties to Societies not consisting wholly of members of the University, or to persons not being members of the University, or for purposes not connected with the objects of the University, except by special vote of the Corporation.

5.—In case of the use of any room or building being desired for any special meeting or for the regular meetings of any University Society, the application shall be made in writing to the Principal and to the Dean of the Faculty ordinarily using or having charge of the room or building, and shall be signed by at least three members of the University, who shall be held responsible for the character and order of such meeting or meetings, and shall make such provision as may be required by the Principal or the Faculty, in the interest of the University, for the character and order of such meeting or meetings, for the conduct of visitors admitted thereto, and for the expenses involved.

[Copies of the Regulations in full may be obtained on application to the Secretary of the University.]

McGill Normal School.

1880-81.

Government of the School.

Under the Regulations for the establishment of Normal Schools in the Province of Quebec, the Superintendent of Education is empowered to associate with himself, for the direction of one of these Schools, the Corporation of McGill University, Montreal. In accordance with this arrangement, the Provincial Protestant Normal School is affiliated with the McGill University, and the following members of the Corporation of the University constitute the Committee of the Normal School for the Session of 1880-81.

NORMAL SCHOOL COMMITTEE.

J. W. Dawson, LL.D., F.R.S., Vice-Chancellor of the University, *Chairman.*

Hon. James Ferrier, Senator,
Peter Redpath, Esq., } Governors of McGill College.

Rev. George Cornish, LL.D.
Robert A. Ramsay, M.A., B.C.L. } Fellows of McGill University.

William Craig Baynes, B.A., *Secretary.*

OFFICERS OF INSTRUCTION.

William Henry Hicks, Esq.—*Principal and Ordinary Professor of English Language and Literature.*

James McGregor, LL.D.—*Ordinary Professor of Mathematics, and Instructor in Classics.*

Sampson Paúl Robins, LL.D.—*Associate Professor of Natural History.* (*)

Pierre J. Darey, M.A., B.C.L.—*Associate Professor of French.*

Mr. Harrington Bird.—*Instructor in Drawing.*

* Prof. Robins will also deliver lectures on the Art of Teaching to the Elementary Class.

MR. R. J. FOWLER.—*Instructor in Music.*

MR. JOHN ANDREW—. " *in Elocution.*

J. BAKER EDWARDS, Ph.D.—*Lecturer on Chemistry and Natural Philosophy.* (†)

FRANK W. HICKS, M.A.—*Assistant Professor of History and English Language and Literature.*

ANNOUNCEMENT FOR NEXT SESSION.

This institution is intended to give a thorough training to teachers, especially for the Protestant population of the Province of Quebec. This end is attained by instruction and training in the Normal School itself, and by practice in the Model Schools; and the arrangements are of such a character as to afford the greatest possible facilities to Students from all parts of the Province.

The Twenty-fourth Session of this School will commence on the first of September, 1880, and will terminate on the first of July, 1881.

The complete course of Study extends over three years, and the Students are graded as follows:—

1. *Elementary School Class.*—Studying for the Elementary School Diploma.
2. *Model School Class.*—Studying for the Model School Diploma.
3. *Academy Class.*—Studying for the Academy Diploma.

---

1. *Conditions of Admission and obtaining Diplomas.*

Candidates for admission into the Elementary School Class will be required to pass an examination in Reading, Writing, the Elements of Grammar, Arithmetic, and Geography; and to produce the certificate, and sign the application, referred to in Articles 1 and 2 of the Regulations. Admission into each of the higher classes requires a knowledge of the subjects of the previous one.

Associates in Arts of the University may be admitted into the Elementary and Model School Classes without examination, provided that they have passed in Geometry, Algebra and French.

† Dr. Edwards will also lecture on Agricultural Chemistry.

In the Examinations for entrance into the Academy Class, the Principal may allow exemptions to Associates in Arts for such subjects as in the examinations for that certificate they may have passed in with credit.

Each Student must produce a certificate of good moral character from the clergyman or minister of religion under whose charge he has last been, and also testimony that he has attained the age of sixteen years. He will also be required to sign a pledge that he purposes to teach for three years in some Public School in the Province of Quebec.

There will be a Semi-sessional Examination at Christmas, which all Students are required to pass, in order to continue in the classes.

At the close of the first year of Study, students may apply for examination for diplomas giving the right to teach in Elementary Schools ; and after two years' study, or if found qualified at the close of the first year, they will, on examination, be entitled to diplomas as teachers of Model Schools.

Students having passed the examination for the Model School Diploma, with creditable marks in Classics and Mathematics, or having otherwise advanced to the requisite knowledge, may go on to the Academy Class, and, on examination, may obtain the Academy Diploma.

---

2. *Privileges of Students.*

On complying with the above conditions, all students will be recognized as *Teachers-in-training;* and as such will be entitled to free tuition with the use of text books, and to bursaries in aid of their board, not exceeding $36.00 per annum in the case of those in the two first Classes, or $80.00 in the case of those in the Academy Class should they be successful in obtaining the diploma at the final examination. A portion of this allowance will be advanced to such students as are not resident in Montreal, on their passing the semi-sessional examination at Christmas.

Under the regulations subjoined, and with the view of extending the benefits of the School to all parts of the country, those who reside at a distance of more than ninety miles from the city of Montreal will also be entitled to a small allowance for travelling expenses, proportionate to the distance.

Students resident in Montreal may share in the bursary fund, on producing certificates from their ministers or clergymen that such aid is absolutely necessary to their continuing in attendance at the school.

In addition to religious instruction of a general Protestant character by the Professors, arrangements will be made for special religious instruction by ministers representing the several denominations with which the students may be connected.

No boarding-house is attached to the institution, but every care will be taken to insure the comfort and good conduct of the students, in private boarding houses approved by the Principal. Board can be obtained at from $10 to $14 per month.

The Prince of Wales Medal and Prize will be given to the Student taking the highest place in the Model School Class, provided that such Student shall attain to the standard fixed by the Regulations of the Council of Public Instruction for this Medal.

The Marquis of Lorne Medal will be given to the student taking the highest place in the Classical and Mathematical subjects to the Academy class, and passing creditably in the other subjects.

The J. C. Wilson Prize of $40 and a Book, contributed by him as a former Student of the School, will be offered for competition to the candidates for the Elementary Diploma, and will be given for the highest aggregate number of marks.

All the preceding regulations and privileges apply to female as well as to male students.

Persons holding the degree of B. A. or M. A. of any University in the Province of Quebec, may receive the Academy Diploma, on passing an examination in the art of teaching, and in such other subjects necessary to the Academy Diploma, as may not have been included in their University Examinations.

---

3. *Course of Study.*

1. ELEMENTARY SCHOOL CLASS, STUDYING FOR THE ELEMENTARY SCHOOL DIPLOMA.

With the view of accommodating those who may be unable to enter at the commencement of the Session, or whose previous edu-

cation may enable them to enter at a more advanced period, the course of study in this class is divided into terms, as follows :—

FIRST TERM, from September 1st to December 26th.

(*Entrance examination as stated above.*)

English.—Grammar and Composition; so far as to parse syntactically and write correctly a few short descriptive sentences (Text-Books, Bullion's Grammar and Parker's Progressive Lessons); Reading and Spelling, Etymology, Penmanship, Elocution.

Geography.—So far as to have a good acquaintance with the Map of the World.

History.—Outline of Sacred and Ancient History.—History of Canada. Text-Books, White and Hodgins.

Arithmetic.—Simple and Compound rules, Properties of Numbers, Scales of Notation. Text-Book, Sangster's Arithmetic.

Algebra.—The Elementary rules as in Todhunter's Algebra.

Geometry.—First Book of Euclid.

Art of Teaching.—The Physical, Mental and Moral Constitution of Children.

Physics.—The Chief Forces of Nature, Properties and States of Bodies, Solids, Liquids and Gases.

French.—Elements of Grammar, easy reading and translation. Text-Books, Student's Companion to the study of French. Darey, Lectures francaises.

Natural History.—Botany as in Gray's Text-Book.

Drawing.—Elements and simple outlines.

Music.—Vocal Music with Part Songs.

SECOND TERM. January 1st to April 1st.

(*Pupils entering at the commencement of this term will be expected to pass a satisfactory examination in the subjects of the previous term.*)

English.—Grammar and Composition, so far as to be able to analyse simple and complex sentences, and to write correctly a short essay on a familiar subject. —Elocution continued.

Geography.—So far as a good acquaintance with the physical features and political divisions of the great continents.

History.—England and France. Ancient History.

Arithmetic.—Vulgar Fractions. Proportion and Per-centage.

Algebra.—Simple Equations.

Geometry.—Second Book of Euclid.

Art of Teaching.—General Methods of Education.

Physics.—Motion. Vibration. Heat and Light.

French.—Grammar continued; including Reading, Translation, Oral and Written Exercises.

Natural History.—Continued.

Drawing.—Landscape, etc., in Pencil.

Music.—Elements of Vocal Music, and Part Songs.

THIRD TERM. April 1st to July 1st.

(*Pupils entering at the commencement of this term will be expected to pass a satisfactory examination in the subjects of the previous terms.*)

English.—Advanced Lessons, Grammar, and Composition, Elocution continued.

Geography and History.—Advanced Lessons, with use of Globes, and recapitulation of previous parts of the course.

Arithmetic.—As applied to Mensuration; and general recapitulation.

Book-keeping.—First principles.

Algebra.—Simple Equations of two and three unknown quantities.

Geometry.—Recapitulation and Deductions.

Art of Teaching.—School arrangements.

Elementary Chemistry.—Elements and Constituents of Soils.

French, Natural History, Drawing and Music.—Continued as in the previous term.

Religious Instruction will be given throughout the Session.

---

2. MODEL SCHOOL CLASS, STUDYING FOR THE MODEL SCHOOL DIPLOMA.

(*Students entering this Class must have passed a satisfactory examination in the subjects of the Elementary School Class. The Class will pursue its studies throughout the Session, without any definite division into terms.*)

English.—Principles of Grammar and Composition, Style. History of the English Language. Lectures on English Literature. Elocution.

Geography.—Mathematical, with Nautical Problems. Detailed course of Political and Physical Geography.

History.—Mediæval and Modern, with special reference to the History of Literature, Science and Art, and Colonization and Commerce.

Education.—Advanced course of Lectures on Educational Subjects.

Arithmetic.—Logarithmic, Algebraic and Geometric Arithmetic, Recapitulation of Commercial Arithmetic and Book-keeping.

Algebra.—Quadratic Equations. Ratios and Progression. Theorem of Undetermined Coefficients, and Binomial Theorem.

Geometry.—Third, Fourth and Sixth Books of Euclid. Application to Mensuration.

Object Lessons.

Chemistry and Natural Philosophy.—Affinity, Laws of Combination, Principal groups of Salts, Electricity and Electrolysis, Mechanical Physics.

Classics.—Elements of the Latin Language, as in Bryce's 1st Latin Reader.

French.—Student's Companion. Translation from French into English, and from English into French ; Darey, Lectures francaises.

Agricultural Chemistry.—Principles, and application to Canadian Agriculture.

Drawing.—Figures from the Flat and from Models. Elements of Perspective.

Music.—Instrumental Music, Part Songs, and Rudiments of Harmony.

Religious Instruction throughout the Session.

---

3. ACADEMY CLASS, STUDYING FOR THE ACADEMY DIPLOMA.

(*Students entering this Class must have passed a creditable examination in the subjects preparatory to the Course of Study.*)

English Literature.—An advanced course.

History and Geography.

Logic and Ethics.—As in Abercrombie's Intellectual and Moral Philosophy.

Mathematics.—Trigonometry. Solid Geometry and Mechanics :—Galbraith and Haughton.

Latin.—Sallust, Catiline ; Virgil, Æneid, Book VI. ; Latin Prose Composition, Roman History.

Greek.—New Testament, John's Gospel ; Xenophon, Anabasis B. I. ; Grammar and History.

Botany.—As in Gray's Text-Book.

French.—Conversation in French. French Literature. Poitevin's French Grammar, Racine and Molière.

Elocution.

Drawing.

Education and object Lessons. In the case of students who have not already attended the lectures in these subjects.

EXTRACTS FROM THE REGULATIONS.

Special Regulations for the admission of Teachers-in-training.

Article First.—Any person desirous of being admitted as a Teacher-in-training must apply to the Principal of the Normal School, who, on his producing an extract from the Register of Baptisms, or other evidence, showing that he is full sixteen years of age, with the certificate of character and conduct required by the 6th article of the General Rules and Regulations, approved by His Excellency the Governor-General in Council, on the 22nd December, 1856, shall examine the candidate.

If upon his examination it is found that the candidate can read and write sufficiently well, knows the Rudiments of Grammar in his mother tongue, Arithmetic as far as the rule of three inclusively, and has some knowledge of Geography, the Principal shall grant him a certificate.

Article Second.—The candidate having thus obtained the certificate of the Principal, shall then (in the presence of two witnesses, who, with the Principal, shall countersign the same) sign an application in writing for admission, containing the declaration required by the 23rd general regulation. This shall be forwarded to the Superintendent of Education, together with all the certificates and other documents required, and if the whole be found correct, the Superintendent shall cause the name of the candidate to be inscribed in the Register, and notice thereof shall be given to the Principal.

Article Third.—The teachers-in-training shall state the place of their residence; and those who cannot reside with their parents will be permitted to live in boarding-houses, but in such only as shall be specially approved of. No boarding-houses having permission to board male teachers-in-training will be permitted to receive female teachers-in training as boarders, and *vice versa*.

Article Fourth.—Every teacher-in-training, on passing the examination, will be allowed a sum not exceeding $36 to assist in paying his board. (*)

Article Fifth.—Every teacher-in-training residing at a distance of more than ninety miles from the City of Montreal, shall be entitled to receive an allowance for travelling expenses proportionate to the distance, but not to exceed ten dollars *per annum*.

Article Sixth.—The total amount of allowances paid to teachers-in-training under the foregoing articles shall not exceed $1,333.33 currency, yearly—that being the sum granted for that object; and when the whole of this amount is appropriated, such teachers-in-training as may apply for admission shall not be entitled to any portion thereof until vacancies shall occur.

Special Regulations for Government and Discipline.

Article First.—Teachers-in-training guilty of drunkenness, of frequenting

* Except in the case of Teachers-in-training for the Academy Diploma, who may receive a sum not exceeding $80.

taverns, of entering disorderly houses or gambling houses, or keeping company with disorderly persons, or committing any act of immorality or insubordination, shall be expelled.

Article Second.—There shall be no intercourse between the male and female Teachers-in-training while in School, or when going to, or returning from it. Teachers of one sex are strictly prohibited from visiting those of the other.

Article Third.—They are on no account to be absent from their lodgings after half-past nine o'clock in the evening.

Article Fourth.—They will be allowed to attend such lectures and public meetings only as may be considered by the Principal conducive to their moral and mental improvement.

Article Fifth.—Proprietors of boarding-houses authorized by the Principal shall report to him any infraction of the rules with which they may have become acquainted.

Article Sixth.—The Professors shall have the power of excluding from the lectures, for a time, any student who may be inattentive to his studies, or guilty of any minor infraction of the regulations.

Article Seventh.—Teachers-in-training will be required to state with what religious denomination they are connected; and a list of the Students connected with each denomination shall be furnished to one of the Ministers of such denomination resident in Montreal, with request that he will meet weekly with that portion of the Teachers-in-training, or otherwise provide for their religious instruction. Every Thursday after four o'clock will be assigned for this purpose.

Article Eighth.—In addition to punctual attendance at weekly religious instruction, each student will be required to attend public worship at his own church, at least every Sunday.

Intending students may obtain all necessary information on application to the Principal or either of the Professors.

MODEL SCHOOLS OF McGILL NORMAL SCHOOL.

Head Teacher of Boys' School—Frank W. Hicks, M.A.
" " Girls' School—Jane A. Swallow.
" " Primary School—Lucy H. Derick.

These Schools can accommodate about 300 pupils, are supplied with the best furniture and apparatus, and conducted on the most modern methods of teaching. They receive pupils from the age of six and upwards, and give a thorough English Education. Fees. Boys' and Girls' Model Schools, 25c. to 40c. per week; Primary School, 15c.; payable weekly.

Time Table of McGill Normal School.

SESSION 1880-81.

ELEMENTARY SCHOOL CLASS.

Hours.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9		Arithmetic.		Arithmetic.		Elocution.
10	Model School.	Algebra & Geometry.	Model School.	Algebra.	Model School.	Drawing.
11	Gymnastics.	Writing.		Geometry.	Gymnastics.	Singing.
1	Geography.	Model School.	Geography.		Grammar.	
2	French.	Elocution.	English Literature.	Model School.	French.	
3	History.	Nat. Philosophy.	French.	Elocution.	Art of Teaching.	
4	Botany.		Composition.	Religious Instruction.	History.	

MODEL SCHOOL CLASS.

9	Arithmetic.		Algebra.		Geometry.	Drawing.
10	Latin.	Model School.	Latin.	Model School.	Arith. & Algebra.	Elocution.
11	English Literature.		Singing.			Singing.
1	Chemistry.	Education.		Agricultural Chem'y	Model School.	
2	Elocution.	Grammar.	French.	Geography.	2½ Elocution.	
3	French.	History.	Object Lessons.	Composition.	3 French.	
4				Religious Instruction.		

ACADEMY CLASS.

9		Model School.				Drawing.
10				Model School.		Elocution.
11	Latin.	Greek.	Latin.	Greek.	Latin.	Practical Chem'y.
1	Mathematics.	Geography.	Mathematics.		Latin.	
2	Elocution.	History.			Mental Philosophy.	
3	French.		Object Lessons.	Composition.	French.	
4				Religious Instruction.		

Passed the University Examinations.

SESSION 1879-1880.

FACULTY OF LAW.

PASSED FOR THE DEGREE OF B.C.L.

Albert W. Atwater.
Kutusoff N. McFee.
Eugene Lafleur.
Robert S. Weir.
J. G. Aylwin Creighton.
W. Prescott Sharp.
John McKercher.
Joseph P. Cooke.
Camille Madore.
Alfred L. DeBeaumont.
Jean Baptiste Laplante.
Wm. McLennan.
Joseph E. Austin.
Charles L. DeMartigny.
Henry R. Hammond
Joseph Painchaud.
François O. Dugas.
William B. S. Reddy.
Henri A. Govette.
Pierre J. Doré.
Jean B. S. Biron.
J. C. Alguire.
James W. Brakenridge.*
Herbert S. Hunter.*
Joseph B. Berthelot.*

* Degree granted but not conferred.

FACULTY OF MEDICINE.

PASSED FOR THE DEGREE OF M.D., C.M.

(Arranged Alphabetically.)

Ayer, Nehemiah, B.A.
Church, F. W.
Calahan, James.
Cowley, D. K.
Dibblee, G. O.
Edwards, T. S.
Heard, C. de W., M.A.
Henderson, And.
Inksetter, D. G.
Logan, Robert
McLaren, D. C., B.A.
McKenzie, B. E., B.A.
McEachran, Wm.
Macdonald R. C.
McDonald, J. A.
McNulty, M.
Maas, R. J.
Mignault, L. D., B.A.
O'Callaghan, T. A., B.A.
Pinsoneault, B.
Pringle, A. F.
Poole, H. E.
Pulford, F. W.
Riordan, B. L.
Ruttan, A. M.
Ross, G. T.
Stewart, J. O.
Small, H. B.
Smiley, J.
Stevenson, Hans.

PASSED THE PRIMARY EXAMINATIONS.

Burland, B. W.
Campbell, Lorne.
Christie, Edmund.
Cormack, Wm.
Carson, J. H.
Dawson, Rankine, B.A.
Dunlop, A. H.
Duncan, W. T.
Grant, J. A., B.A.
Gordon, Chas. M.
Harvie, J. B.
Houston, D. W.
Hurdman, B. F. W.
Klock, R. H.
Lunam, H., B.A.
McDonald, A.
McLean, T. M.
McNulty, Michael.
Mewburn, F. H.
Moore, William.
O'Keefe, H.
Ogden, H. V., B.A.
Poole, H. E.
Reynolds, T. W.
Ross, James, B.A.
Shaver, W. H.
Struthers, A. D.
Shaw, Alex.
Stephen, Wm.
Shanks, J. C.
Shufelt, W. A.
Thornton, H. W., B.A.
Trueman, J. E.
Vanier, Philias.
Wagner, G. C.
Williams, Joseph.

FACULTY OF ARTS.

PASSED FOR THE DEGREE OF B.A.

In Honours.

(Alphabetically Arranged.)

First Rank.—Bull, Harcourt J.
Currie, Dougald.
Darey, J. Herbert.
Lafleur, Paul T.
Molson, Charles A.

Second Rank.—Craig, James A.
Cunningham, Thomas E.
Roberts, George F.

Ordinary.

(In order of Merit.)

(1) *McGill College.*

Class I.—Keays, Charles H.

Class II.—Raynes, Charles.
Ogilvie, Archibald.
Pillsbury, Carroll, E.
Scriver, Charles W.
Allen, Frank A.
Lariviere, Vitalien.
Bayne, George D.

Class III.—Muir, Andrew C.
Klock, Robert A.
Bennett, James.
Mercer, Walter D.

(2) *Morrin College.*

Class I.—Hemming, Henry.
Class II.—None.
Class III.—Walker, John.
Ferguson, James D.

PASSED THE INTERMEDIATE EXAMINATION.

(1) *McGill College.*

Class I.—Fry, Hague, Rielle, Rogers.
Class II.—Parent, Trenholme, Whillans, Smith, McKillop, Mackay.
Class III.—Lafleur, Morin, Martin, Thomas, Walker, Barron, Stirling.

(2) *Morrin College.*

Class I.—None.
Class II.—Hewitt.
Class III.—None.

(3) *St. Francis College.*

Class I.—None.
Class II.—Brown.
Class III.—Duffett.

BACHELORS OF ARTS PROCEEDING TO THE DEGREE OF M. A. IN COURSE.

Ward, George B., B.A.
Lyman, Henry H., B.A.
Amaron, Calvin E., B.A.
Forneret, George H., B.A.

MASTERS OF ARTS PROCEEDING TO THE DEGREE OF LL.D. IN COURSE.

Robins, Sampson P., M.A.
Morrison, James D., M.A.
McGregor, James, M.A.

Scholarships and Exhibitions.

SESSION 1879-80.

I.—SCHOLARSHIPS (Tenable for Two Years).

Year of Commencement.	Name of Scholar.	Subject of Examination.	Annual Value.	Founder and Donor.
1878	Currie, Dugald.	Science.	$125	W. C. MacDonald, Esq.
1878	Lafleur, Paul T.	Class.& Mod. Lan	125	W. C. MacDonald, Esq.
1878	Darey, J. Herb't.	Class.& Mod. Lan	120	Chas. Alexander, Esq.
1879	Ferguson, W. A.	Science(Matheml.)	125	W. C. MacDonald, Esq.
1879	Ami, Henry M.	Science (Nat. Sc.)	125	W. C. MacDonald, Esq.
1879	Falconer, Alex.	Class.& Mod. Lan	125	W. C. MacDonald, Esq.
1879	Tucker, John W.	Class.& Mod. Lan	125	W. C. MacDonald, Esq.

II.—EXHIBITIONS (Tenable for One Year).

Name of Exhibitioner.	Academic Year.	Annual Value.	Founder or Donor.
Hague, Henry J.....	Second Year.	$125	W. C. MacDonald, Esq.
Lafleur, Henri A.....	"	125	W. C. MacDonald, Esq.
Fry, Henry.....	"	100	Mrs. Jane Redpath.
Cameron, John D.....	First	125	W. C. MacDonald, Esq.
Hunter, Walter	"	125	W. C. MacDonald, Esq.
Brown, J. G. Williston....	"	100	Governors.

Anne Molson Mathematical Prize. (Awarded at Mathematical Scholarship Examination,

Weeks (William A.)

Prizes, Honours and Standing.

Session 1879-80.

FACULTY OF LAW.

GRADUATING CLASS.

ELIZABETH TORRANCE MEDAL.—ALBERT W. ATWATER.
ELIZABETH TORRANCE PRIZE.—KUTUSOFF N. MCFEE.
Prize for best Thesis.—J. S. A. CREIGHTON.

Passed with First Rank Honours.—ATWATER, MCFEE, LAFLEUR, WEIR, CREIGHTON, SHARP, MCKERCHER.

Second Rank Honours.—COOK, MADORE.

(For Third Year's Students passed for the Degree, see Graduating Lists.)

Standing in the Several Classes.

INTERNATIONAL LAW.—PROFESSOR KERR.
First, ATWATER, Professor's Prize.
Second, LAFLEUR.

ROMAN LAW.—PROFESSOR TRENHOLME.
First, MCFEE.
Second, ATWATER.

CRIMINAL PROCEDURE.—PROFESSOR ARCHIBALD.
First, LAFLEUR, ATWATER and MCFEE, equal.
Second, CREIGHTON.

LEGAL HISTORY.—PROFESSOR LAREAU.
First, MCFEE and ATWATER, equal.
Second, LAFLEUR.

CIVIL PROCEDURE.—PROFESSOR HUTCHINSON.
First, MCFEE.
Second, COOKE, LAFLEUR and ATWATER, equal.

CIVIL LAW.—PROFESSOR ROBIDOUX.
First, WEIR, ATWATER, and LAFLEUR, equal.
Second, MCFEE.

SECOND YEAR.

Prize for General Proficiency.—WILLIAM A. WEIR.
Second Prize.—ALLAN R. OUGHTRED.
Honours of First Rank.—WEIR, OUGHTRED, SMITH, LIGHTHALL, CROSS.
Honours of Second Rank.—AYLMER, SJOSTROM, LYMAN.

Passed the Sessional Examinations.—William A. Weir, Allan R. Oughtred, Robt. C. Smith, William D. Lighthall, Alexander Cross, Hon. Henry Aylmer, Paul R. G. Sjostrom, Albert C. Lyman, William W. Redpath, Edmund M. McMahon, Allen G. Ingalls, Edmund W. P. Guerin, Donald Downie, George G. Foster, Charles Raynes, Joseph L. Forster, Alexander C. Rutherford, Campbell Lane, Antoine A. Gauthier, Richmond L. De Martigny.

Standing in the Several Classes.

INTERNATIONAL LAW.—Professor Kerr.
First, Weir.
Second, Creighton.

ROMAN LAW.—Professor Trenholme.
First, Oughtred.
Second, Lighthall.

CRIMINAL PROCEDURE.—Professor Archibald.
First, McMahon and Weir, equal.
Second, Cross and Oughtred, equal.

LEGAL HISTORY.—Professor Lareau.
First, Guerin and Weir, equal.
Second, Ingalls.

CIVIL PROCEDURE.—Professor Hutchinson.
First, Weir.
Second, Cross.

CIVIL LAW.—Professor Robidoux.
First, Weir.
Second, Oughtred.

FIRST YEAR.

Prize for General Proficiency.—George C. Wright.

Second Prize.—Frank Weir.

Honours of First Rank.—Wright, Weir, Goldstein, Morgan, McDonald, Barnard, Scriver, Lefebvre, Klock, White.

Honours of Second Rank.—Cross, Joliffe, Renaud, Weeks.

Passed the Sessional Examinations.—George C. Wright, Frank Weir, Maxwell Goldstein, Edward A. D. Morgan, Hector C. McDonald, Archibald E. Barnard, Charles W. Scriver, Toussaint Z. Lefebvre, Robert A. Klock, William J. White, Pierre N. Renaud, William H. Cross, William A. Weeks, William J. Joliffe, George R. Lighthall, Ezra F. Hipple, George A. Brooke, Joseph A. Dagenais, John T. Duhig, Alfred L. Guertin, Alfred C. Girard.

Standing in the Several Classes.

ROMAN LAW.—PROFESSOR TRENHOLME.
First, WRIGHT.
Second, LEFEBVRE.

CRIMINAL LAW.—PROFESSOR ARCHIBALD.
First, WEIR.
Second, WHITE.

LEGAL HISTORY.—PROFESSOR LAREAU.
First, MORGAN and WEIR, equal.
Second, MCDONALD.

CIVIL PROCEDURE.—PROFESSOR HUTCHINSON.
First, WRIGHT.
Second, GOLDSTEIN.

CIVIL LAW.—PROFESSOR ROBIDOUX.
First, RENAUD.
Second, WRIGHT.

FACULTY OF MEDICINE.

HOLMES GOLD MEDAL.—JOHN A. MCDONALD, of Panmure, P.E.I.

The Prize for the Final Examination.—HENRY B. SMALL, of Ottawa.

The Prize for the Primary Examination.—JAMES ROSS, B.A., Dewittville, Q.

The Sutherland Gold Medal.—H. W. THORNTON, B.A., Montreal.

Students deserving honorable mention.

In the Final Examination, Messrs. STEVENSON, HENDERSON and MIGNAULT, B. A.
In the Primary Examination, Messrs. H. V. OGDEN, B.A., R. DAWSON, B.A., W. MOORE, H. W. THORNTON, B.A., and T. W. REYNOLDS.

Professors' Prizes.

BOTANY.—First Prize, C. E. CAMERON, of Montreal, and J. GREY, Brucefield, Ont., equal.

PRACTICAL ANATOMY.—Demonstrator's Prize, awarded to JAMES ROSS, B.A., Dewittville, Q.

(For other Lists, see under heading "Faculty of Medicine," p. 88.)

FACULTY OF ARTS.

GRADUATING CLASS.

B.A. Honours in Classics.

DAREY, J. HERBERT.—First Rank Honours and Henry Chapman Gold Medal.

B.A. Honours in Natural Science.

MOLSON, CHARLES A.—First Rank Honours and Logan Gold Medal.

B.A. Honours in Mental and Moral Philosophy.

BULL, HARCOURT J.—First Rank Honours and Prince of Wales Gold Medal.
CUNNINGHAM, THOMAS E.—Second Rank Honours.
ROBERTS, GEORGE FRANCIS.—Second Rank Honours.
CRAIG, JAMES ALEXANDER.—Second Rank Honours.

B. A. Honours in English Language, Literature and History,

LAFLEUR, PAUL T.—First Rank Honours and Shakspere Gold Medal. Early English Text Society's Prize.
CURRIE, DOUGALD.—First Rank Honours and Prize.

Special Certificate for B. A. Ordinary.

KEAYS, CHARLES H.—First Class.

THIRD YEAR.

ALEXANDER FALCONER.—First Rank Honours in English Literature and Prize; First Rank General Standing; Prize in Rhetoric; Prize in Classics; Prize in Moral Philosophy.
WILLIAM A. WEEKS.—First Rank Honours in Mathematical Physics and Prize; First Rank General Standing.
JOHN ELDER.—First Rank Honours in Mental and Moral Philosophy; First Rank General Standing; Prize in Zoology.
WILLIAM A. FERGUSON.—First Rank Honours in Mathematical Physics and *Anne Molson Prize.*
JOHN W. TUCKER.—Second Rank Honours in Classics; First Rank General Standing.
WILLIAM A. MCKENZIE.—Second Rank Honours in Classics; First Rank General Standing.
KENNETH R. MACPHERSON.—Second Rank Honours in Natural Sciences.
JOHN C. BRACQ.—Second Rank Honours in Mental and Moral Philosophy.
JAMES REID.—Second Rank Honours in Mental and Moral Philosophy.
ARCHIBALD MCLEOD.—First Rank General Standing; Prize in Classics.
HENRY M. AMI.—Prize for Collection of Plants.
WALTER E. LYMAN.—Second Prize for Collection of Plants.

PASSED THE SESSIONAL EXAMINATIONS.

Falconer, Tucker, McLeod, Weeks, Elder, McKenzie, Ferguson, Lyman, White, Macpherson, Bracq, McDonald, Reid, Weir, Black.

SECOND YEAR.

FRY, HENRY.—(High School, Quebec.)—First Rank General Standing; Prize in Logic.

HAGUE, HENRY J.—(Upper Canada College.)—First Rank General Standing.

RIELLE, NORMAN T.—(Proprietary School, Montreal.)—First Rank General Standing; Prize in English.

ROGERS, JOHN H.—(Private Tuition.)—First Rank General Standing,

WHILLANS, GEORGE.—(Ottawa Collegiate Institute.)—Prize in Hebrew.

SMITH, ARTHUR W.—(High School, Montreal.)—Prize in Logic; Prize in Botany.

PASSED THE SESSIONAL EXAMINATIONS.

Fry, Hague, Rielle, Rogers, Parent, Trenholme, Walker, Whillans, Smith, McKillop, Mackay, Lafleur, Morin, Martin, Thomas, Walker, Stirling.

FIRST YEAR.

BLAND, CHARLES E.—(High School, Montreal.)—Second Rank Honours in Mathematics and Prize; First Rank General Standing; First Prize in Classics.

LEE, ARCHIBALD.—(Private Tuition.)—First Rank General Standing; Prize in Hebrew.

CAMERON, JOHN D.—(Huntingdon Academy.)—First Rank General Standing.

ORR, ALFRED E.—(St. Francis College.)—First Rank General Standing; Prize in French.

PORTER, JAMES A.—(Trinity College School, Port Hope).—Prize in English; Second Prize in Classics.

BROWN, J. WILLISTON.—(Prince of Wales College, P. E. I.)—Prize in German.

ENGLAND, LUTHER M.—(Stanstead Wesleyan College.)—Prize in Chemistry.

PASSED THE SESSIONAL EXAMINATIONS.

Bland, Lee, Cameron, Orr, Griffith, Brown, Shearer, Elliott, Porter, Gardner, Hunter, England, Ross, Fraser (D. J.), Tait, O'Halloran, Greenshields, Chipman, Fraser (W. J.), Morris, Kinloch, Bowers, Barlow, Richardson, Doane.

At the Examinations in September 1879, the following *Scholarships* and *Exhibitions* were awarded:—

THIRD YEAR.—Ferguson and Falconer and Ami (H.), and Tucker; *W. C. McDonald Scholarships*, each $125 annual value.

SECOND YEAR.—Hague (H. J.) and Lafleur (H. A.):—*W. C. McDonald Exhibitions*, each $125 annual value; Fry:—The Jane Redpath Exhibition, $100 annual value.

FIRST YEAR.—Cameron and Hunter:—*W. C. McDonald Exhibitions*, each $125 annual value; Brown:—*the Governors' Exhibition*, $100 annual value.

At the Mathematical Scholarship Examinations in September 1879, the *Anne Molson Prize* was awarded to Weeks (William A).

CHRISTMAS EXAMINATIONS, 1879.

GREEK.

THIRD YEAR.—*Class I.*—McLeod (Archd.) and Tucker, equal; Elder and Falconer, equal; Weeks. *Class II.*—Lyman, McDonald, Robertson; Bracq and Ferguson, equal; Reid, Gamble. *Class III.*—McNabb; Ami (H. M.) and Macpherson and White, equal; Rutherford, Black.

SECOND YEAR.—*Class I.*—Lafleur (Hy. A.), Fry; Hague (Hy. J.) and Whillans, equal; Rielle and Rogers, equal; Smith. *Class II.*—Trenholme and Morin, equal; Parent; Thomas and Barron, equal; McKillop and Macrae and Stirling, equal. *Class III.*—Mackay, Stewart; Cockfield and Martin and Walker, equal.

FIRST YEAR.—*Class I.*—Bland; Griffith and Porter, equal; Shearer; Brown and Cameron, equal. *Class II.*—Hunter, Ross; Elliott and Gardner, equal; Bowers, O'Halloran; Chipman and England and Fraser (Wm.), equal; Doane. *Class III.*—Fraser (Donald); Kinloch and Tait, equal; Barlow, Morris, Greenshields, Marceau, Lamb, McLennan.

LATIN.

THIRD YEAR.—*Class I.*—Falconer and McLeod (Arch'd), equal; Tucker, Weeks, Elder; Lyman and Macpherson, equal. *Class II.*—Ami (H. M.) and Bracq and McDonald and Weir, equal; Reid and Rutherford, equal; White; Black and Gamble and Robertson, equal. *Class III.*—McNabb.

SECOND YEAR.—*Class I.*—Hague (Hy. J.); Fry and Lafleur (Hy. A.), equal; Rielle and Whillans, equal; Rogers, Trenholme. *Class II.*—Parent, Morin, Smith, Barron; McKillop and Martin and Thomas, equal; Cockfield and Stirling, equal. *Class III.*—Walker, Mackay, Macrae, Stewart.

FIRST YEAR.—*Class I.*—Bland, Griffith; Brown and Shearer, equal; Cameron, Elliot; Hunter and Porter, equal; Fraser (Wm). *Class II.*—Bowers and England and Gardner and Ross, equal; Chipman and Doane, equal; O'Halloran. *Class III.*—Fraser (Don.) and Morris and Tait, equal; Barlow; Greenshields and Marceau, equal; Kinloch.

ENGLISH LITERATURE.

FOURTH YEAR.—*Class I.*—Currie and Lafleur (P. T.), equal. *Class II.*—Scriver and Raynes, equal; Pillsbury, Ogilvie. *Class III.*—Klock, Muir, Bayne, Bennett.

SECOND YEAR (Optional).—*Class I.*—Whillans, Thomas, Hague (H. J.). *Class II.*—Fry, Hague (F.), Smith, Macrae, Trenholme, Morin. *Class III.*—Walker, Parent, Mackay.

FIRST YEAR.—*Class I.*—Elliot and Bland, equal; Bowers and Hunter and Shearer, equal; Ross, Brown. *Class II.*—Porter, Cameron, Fraser (D.); Fraser (W.) and Gardner, equal; Tait, Griffith, England, Kinloch; Greenshields and Chipman, equal; Doane, Morris. *Class III.*—Wheeler, Barlow; O'Halloran and McLennan, equal; Lamb, Murray.

RHETORIC.

THIRD YEAR.—*Class I.*—Falconer, Tucker, Elder. *Class II.*—Rutherford, Ami (H. M.), Bracq, Macpherson, Weir, Macdonald, Reid, Weeks, McLeod, Lyman, White; Gamble and Ferguson. *Class III.*—None.

MENTAL AND MORAL PHILOSOPHY.

FOURTH YEAR.—(*Mental Philosophy*).—*Class I.*—Keays, Bull, Cunningham; Raynes and Roberts, equal; Darey, Pillsbury; Allen and Craig, equal; Lafleur (P. T.). *Class II.*—Bayne, Bennett, Gibson, Currie, Scriver, Ogilvie, Bates, McIntyre, Larivière. *Class III.*—Muir, Klock.

THIRD YEAR.—(*Moral Philosophy*).—*Class I.*—Elder, Falconer, Reid, Tucker, Young, Weeks. *Class II.*—Rutherford, Black, Robertson, Bolton, Bracq and Lyman and White, equal; Conron, Weir; Ferguson and Gamble and Macpherson, equal. *Class III.*—McDonald and McLeod and Smith (A. E.) and Stewart (J. B.), equal; Ami (H. M.), McNabb; Dow and Edge, equal.

SECOND YEAR.—(*Elementary Psychology*).—*Class I.*—Hague (H. J.) and Smith (A.W.), equal; Walker, Parent, Rogers, Rielle, Morin. *Class II.*—Lafleur (H. A.), Martin, Whillans, Fry, Trenholme, McKillop. *Class III.*—Gibson and Mackay, equal; Cockfield, Stirling; Barron and Skinner and Thomas, equal; Stewart (R.), Macrae, Chaffee.

HEBREW.

JUNIOR YEAR.—*Class I.*—Reid, Mercer; Rondeau and Young, equal; Fraser, Smith, Morin. *Class II.*—Roberts, Blouin, Mackay. *Class III.*—None

SENIOR YEAR.—*Class I.*—Whillans, Walker, Internoscia. *Class II.*—Carrière. *Class III.*—None.

FRENCH.

THIRD YEAR.—*Class I.*—Ami (H. M.). *Class II.*—None. *Class III.*—None.

SECOND YEAR.—*Class I.*—Morin, Lafleur (H. A.), Hague (H. J.), Fry, Rielle. *Class II.*—Trenholme, Parent, Barron, Smith, Rogers. *Class III.*—Martin and Stirling, equal; Cockfield and Thomas, equal; Macrae, Stewart, Chaffee.

FIRST YEAR.—*Class I.*—Bland, Cameron; Elliot and Shearer, equal; Marceau; Griffith and Lamb, equal. *Class II.*—Ross, Gardner, O'Halloran, Young, Hunter, Chipman; Brown and Porter, equal; Fraser (Don.), Tait, Barlow. *Class III.*—Greenshields and Morris, equal; England; Doane and McLennan, equal; Mallory, Wheeler, Kinloch, Murray.

GERMAN.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Ogilvie. *Class III.*—Bayne.

SECOND YEAR.—*Senior Division.*—*Class I.*—Martin. *Class II.*—Lafleur (H. A.). *Class III.*—Rielle, McKillop. *Junior Division.*—*Class I.*—Barron.

FIRST YEAR.—*Class I.*—Internoscia. *Class II.*—Brown. *Class III.*—Fraser (Wm.), Gardner.

ASTRONOMY.

FOURTH YEAR.—*Class I.*—Bull, Molson; Cunningham and Roberts, equal; Ogilvie. *Class II.*—None. *Class III.*—Craig, Lafleur (P. T.).

MATHEMATICAL PHYSICS.

FOURTH YEAR.—*Class I.*—Roberts, Pillsbury, Bayne (G. D.), McIntyre, Larivière. *Class II.*—Ogilvie and Scriver, equal. *Class III.*—Craig, Lafleur (P. T.), Keays; Allen and Bennett and Raynes, equal.

THIRD YEAR.—*Class I.*—Ferguson; Falconer and Tucker, equal; Weeks, Robertson. *Class II.*—McLeod (Archd.). *Class III.*—McDonald and Reid, equal; Macpherson, White, McNabb; Ami (H. M.) and Gamble, equal; Rutherford, Elder, Weir, Lyman, Bracq.

MATHEMATICS.

SECOND YEAR.—*Class I.*—McKillop, Fry. *Class II.*—Lafleur (H. A.), Trenholme; Hague (H. J.) and Parent, equal; Rielle. *Class III.*—Whillans, Thomas, Rogers, Morin, Martin, Smith (A. W.), Cockfield, Mackay, Macrae, Stewart, Walker, Barron.

FIRST YEAR.—*Class I.*—Cameron, Chipman, Bowers, Bland. *Class II.*—Hunter, Brown, Elliott. *Class III.*—Shearer, Griffith, Porter, Fraser (D. J.), Fraser (W.), England, Doane; Gardner and Kinloch, equal; Barlow and Morris, equal; Murray, Ross, Greenshields, Tait, Young, Marceau.

EXPERIMENTAL PHYSICS.

FOURTH YEAR.—*Class I.*—Darey, Pillsbury, Bull. *Class II.*—Craig and Currie and Scriver, equal; Keays and Molson, equal; Roberts. *Class III.*—Allen and Bennett and Ogilvie, equal; Cunningham, Klock, Muir, Larivière, Raynes.

THIRD YEAR.—*Class I.*—Falconer and Ferguson, equal. *Class II.*—MacPherson. *Class III.*—Tucker, Weeks, Lawford, Ami (H. M.), Elder, Lyman, Bracq; Gamble and White, equal.

MINERALOGY AND PHYSICAL GEOLOGY.

FOURTH YEAR— *Class I.*—Molson, Ogilvie, Muir. *Class II.*—Bayne, MacIntyre. *Class III.*—McFarland (Geology alone).

ZOOLOGY.

THIRD YEAR.—*Class I.*—Reid, Ami (H. M.), Ferguson, Elder, Macpherson, Lyman, Black, Bowers, McLeod, Robertson. *Class II.*—Bracq, McDonald, Rutherford, Lawford, Gamble. *Class III.*—McNabb.

BOTANY.

SECOND YEAR.—*Class I.*—Hague (H. J.), Trenholme, Lafleur (H. A.), Walker, Smith, Fry, Barron, Thomas, Morin, Rogers. *Class II.*—Chaffee, Whillans, Bolton, Hague (F.), Henderson, Macrae, Rielle, Martin, McKillop, Mackay. *Class III.*—Stewart, Hitchcock, Parent, Stirling, Cockfield.

CHEMISTRY.

FIRST YEAR.—*Class I.*—Shearer. *Class II.*—England and Hunter, equal; Elliot Brown, Bowers, Cameron, Ross, Morris, Porter. *Class III.*—Tait, Bland, Doane, Gardner, Fraser (W.), Kinloch, Griffith, Chipman, Greenshields, Young, Barlow, Wheeler, Fraser (D.).

———o———

SESSIONAL EXAMINATIONS, 1880.

ORDINARY COURSE IN ARTS.

GREEK.

B. A. ORDINARY.—*Class I.*—Darey, Keays, Mercer. *Class II.*—Bayne; Muir and Ogilvie, equal. *Class III.*—Larivière, Allen.

THIRD YEAR.—*Class I.*—Falconer and McLeod (*Prizes*), equal; Tucker, Elder; Weeks and McKenzie, equal; Lyman. *Class II.*—Ferguson; Bracq, and McDonald and Robertson, equal; Rutherford and White, equal; Macpherson and Reid, equal. *Class III.*—Black and McNabb, equal; Gamble.

SECOND YEAR.—*Class I.*—Fry and Lafleur (Hy. A.), equal; Rielle, Hague (Hy. J.), Rogers, Parent, Whillans. *Class II.*—Trenholme Smith, Morin; Martin and Stirling, equal; Thomas; Cockfield and Mackay and McKillop, equal. *Class III.*—Barron.

FIRST YEAR.—*Class I.*—Bland (*1st Prize*); Cameron and Porter, equal; Brown and Lee, equal; Gardner and Griffith and Orr, equal; Shearer, Ross, Bowers, Elliot *Class II.*—England and Fraser (Donald), equal; Chipman and Tait, equal; Hunter and O'Halloran, equal; Doane and Fraser (Wm.) and Morris and Richardson, equal. *Class III.*—Marceau, Barlow; Chaffee and Greenshields and Kinloch, equal.

LATIN.

B. A. ORDINARY.—*Class I.*—Darey; Keays and Raynes, equal; Mercer. *Class II.*—Ogilvie and Pillsbury and Scriver, equal; Bayne and Bennett, equal; Allen and Klock and Larivière and Muir, equal. *Class III.*—None.

THIRD YEAR.—*Class I.*—Falconer and McLeod (*Prizes*), equal; Elder; McKenzie and Tucker and Weeks, equal; Lyman. *Class II.*—Macpherson, White; Bracq and Robertson and Weir, equal; McDonald, Rutherford, Reid. *Class III.*—Gamble, Black.

SECOND YEAR.—*Class I.*—Lafleur)Hy. A.); Fry and Rielle, equal; Hague (Hy. J.), Rogers. *Class II.*—Trenholme, Parent, Smith and Whillans, equal; Morin, Martin. *Class III.*—Mackay and Thomas, equal; Barron and Cockfield and McKillop, equal; Stirling and Walker, equal.

FIRST YEAR.—*Class I.*—Bland, Porter (*2nd Prize*); Griffith and Orr, equal; Cameron and Lee, equal; Shearer; Brown and Elliot and Gardner, equal. *Class II.*—Hunter; England and Ross, equal; Chipman, Bowers and O'Halloran, equal; Fraser (Wm.); Fraser (Don.) and Greenshields and Tait, equal. *Class III.*—Doane and Morris, equal; Kinloch, Richardson, Marceau, Barlow.

Honour Examinations in Classics.

B. A.—*First Rank.*—Darey.—*Henry Chapman Gold Medal.*

THIRD YEAR.—*First Rank.*—None.

Second Rank.—Tucker, McKenzie.

GREEK AND ROMAN HISTORY.

FIRST YEAR.—*Class I.*—Griffith and Bowers, equal; Bland; Lee and Cameron equal; Orr and Ross, equal· Brown and Elliott and Greenshields and Shearer, equal. *Class II.*—Fraser (Don.) and Kinloch, equal; Barlow and Gardner, equal; Chipman and Hunter and Morris, equal; England and Porter, equal; O'Halloran and Tait, equal. *Class III.*—Richardson and Young (K. D.), equal; Chaffee and Doane and Fraser (Wm.), equal.

LOGIC AND MENTAL AND MORAL PHILOSOPHY.

B. A. ORDINARY.—(*Mental and Moral Philosophy*).—*Class I.*—Keays, Bull, Roberts, Bayne, Cunningham Craig. *Class II.*—Pillsbury, Ogilvie, Raynes; Allen and Larivière, equal; Scriver, Bennett. *Class III.*—McIntyre, Klock.

OCCASIONAL STUDENTS IN FOURTH YEAR.—(*Mental Philosophy*).—*Class I.* Henderson. *Class II.*—None. *Class III.*—Gibson, Bates.

THIRD YEAR.—(*Moral Philosophy.*—(*Class I*).—Falconer (*Prize,*) Young (W. R.), Elder, Tucker, Rutherford, McKenzie. *Class II.*—Lyman and White, equal; Reid, Smith (A. E.), McLeod, Bracq; Conron and Robertson, equal; Weir; Black and Gamble, equal. *Class III.*—McNabb, Turk, McDonald, Weeks, Macpherson; Ferguson (Wm. A.) and Stewart (J. B.), equal; Edge.

SECOND YEAR.—(*Logic*).—*Class I.*—Fry and Smith (A. W.) (*Prizes,*) equal; Hague (H. J.), Rogers, Rielle; Parent and Whillans, equal; Lafleur (H. A.), Trenholme, Morin. *Class II.*—Martin and Walker, equal; Thomas, Guertin, Barron, Mackay. *Class III.*—Gibson, McKillop, Brown, Stewart, Cockfield, Stirling.

ENGLISH LITERATURE.

B. A. ORDINARY.—*Class I.*—Lafleur, Currie.—*Class II.*—Muir.

Class III.—None.

ENGLISH HISTORY.

B. A. ORDINARY.—*Class I.*—Currie, Lafleur.—*Class II.*—Mercer.

Class III.—Muir.

RHETORIC.

THIRD YEAR.—*Class I.*—Falconer (*Prize*); McKenzie and Weir, equal; McLeod and Elder, equal; Rutherford. *Class II.*—Weeks and Bracq, equal; Tucker, McDonald, Lyman; Ferguson and Macpherson, equal; Gamble, White.

ENGLISH LITERATURE AND HISTORY.

SECOND YEAR.—*Class I.*—Rielle (*Prize*) and Lafleur, equal; Thomas, Fry, Hague (H. J.). *Class II.*—Rogers, Mackay, Martin; Whillans and Hague (F.) and Trenholme, equal; Stirling. *Class III.*—Smith, Walker, Parent, Cockfield, McKillop.

SECOND YEAR. ENGLISH ESSAY.—*Class I.*—Rogers, Rielle, Hague (H. J.), Fry, Lafleur, Thomas. *Class II.*—Whillans, Smith, McKillop, Parent, Mackay, Cockfield, Martin, Stirling, Hague (F.). *Class III.*—Walker, Trenholme.

ENGLISH LANGUAGE.

FIRST YEAR.—*Class I.*—Porter (*Prize*); Bland, Lee, Elliot, Bowers, Tait, England. *Class II.*—Fraser (D.) and Ross, equal; Hunter, Shearer; Brown and Orr, equal; Doane, Gardner, Cameron, Chipman, Griffith. *Class III.*—Marceau; Greenshields and Kinloch, equal; Barlow, Morris, O'Halloran.

ENGLISH LITERATURE.

FIRST YEAR.—*Class I.*—Bowers, Elliot, Hunter, Bland, England, Fraser (D.) Lee. *Class II.*—Brown and Griffith, equal; Orr, Shearer, Tait; Gardner and Ross, equal; Kinloch; Cameron and Porter, equal. *Class III.*—Chipman, Greenshields, Morris, Marceau, Barlow, O'Halloran, Doane.

FRENCH.

THIRD YEAR.—*Class I.*—Bracq, Lyman. *Class II.*—None. *Class III.*—None.

SECOND YEAR.—*Class I.*—Morin, Lafleur (H.A.), Parent. *Class II.*—Hague (H. J.); Fry and Rielle, equal; Rogers; Guertin and Thomas, equal. *Class III.*—Barron; Smith and Stirling, equal; Trenholme, Cockfield.

FIRST YEAR.—*Class I.*—Orr (*Prize*), Bland, Gardner, Elliot, Cameron, Marceau, Ross. *Class II.*—Fraser (D.J.) and O'Halloran, equal; Griffith and Shearer and Greenshields, equal; England, Brown, Chaffee, Porter, Richardson (A.W.); Morris and Tait, equal. *Class III.*—Young, Kinloch, Barlow; Chipman and Mallory, equal; Hunter and McLennan, equal; Doane, Wheeler.

GERMAN.

B. A. Ordinary.—*Senior Division.—Class I.*—Mercer. *Junior Division.—Class I.*—None. *Class II.*—Ogilvie.
Second Year.—*Class I.*—Martin. *Class II.*—None. *Class III*,—McKillop.
First Year.—*Class I.*—Internoscia, Brown (W.,) (*Prize*).
Class II.—Gardner. *Class III.*—None.

HEBREW.

Senior Class.—*Class I.*—Whillans (*Prize*). *Class II.*—Walker, Internoscia.
Class III.—None.
Junior Class.—*Class I.*—Lee (*Prize*), Smith. *Class II.*—Mercer and Young (Wm. R.), equal; Fraser (William), Mackay.
Class III.—None.

MATHEMATICAL PHYSICS.

B. A. Ordinary.—*Class I.*—None. *Class II.*—Ogilvie, Allen, Lafleur (P.T.), Keays. *Class III.*—Raynes, Craig, Larivière, Roberts; Pillsbury and Scriver, equal; McIntyre, Muir, Bayne, Klock, Bennett.
Third Year.—*Class I.*—Ferguson, Tucker, Falconer, Weeks. *Class II.*—Elder.
Class III.—McKenzie, Macpherson; McLeod (Arch.) and White, equal; McDonald, Lyman, Bracq, Weir; Black and Reid, equal.

MATHEMATICS.

Second Year.—*Class I.*—Fry, Parent, McKillop. *Class II.*—Rogers and Trenholme, equal; Hague (H. J.), Rielle. *Class III.*—Barron Whillans, Morin, Stirling, Mackay, Smith (A. W.), Walker, Lafleur (H. A.), Martin, Thomas.
First Year.—*Class I.*—Bland; Bowers and Brown, equal; Cameron and Lee, equal; Hunter, Griffith. *Class II.*—Elliot; Gardner and Porter, equal. *Class III.*—Fraser (W.), Shearer, Orr, Fraser (D.J), England, O'Halloran, Tait, Chipman, Greenshields, Ross, Kinloch and Morris, equal; Doane, Richardson (A.W.), Barlow.

EXPERIMENTAL PHYSICS.

Fourth Year.—*Class I.*—Currie, Molson, Keays, Cunningham, Darey, Raynes, Scriver, Pillsbury. *Class II.*—Bull, Allen, Larivière. *Class III.*—Klock, Bennett.
Third Year.—*Class I.*—Falconer, Weeks, Ferguson, Tucker. *Class II.*—Bracq, Elder, Lyman. *Class III.*—Macpherson, White, Weir, Gamble.

Honour Examinations in Mathematics and Natural Philosophy.

Third Year.—(*Math. Physics*).—*First Rank.*—Ferguson (*Anne Molson Prize*); Weeks, (*Prize*).
First Year.—(*Mathematics*).—*First Rank.*—None.
Second Rank.—Bland (*Prize*).

NATURAL SCIENCE.

B. A. ORDINARY.—(*Geology and Mineralogy.*)—*Class I.*—Molson. *Class II.*—Ogilvie, Mercer, Bayne. *Class III.*—Muir, McIntyre.

B. A. HONOURS.—Molson (Ch. A.) *First Rank Honours*, and *Logan Gold Medal.*

THIRD YEAR.—(*Zoology*)—*Class I.*—Elder (*Prize*), McKenzie, Reid. *Class II.*—Lyman, McLeod, Bracq, Macpherson, Bowers, Rutherford, Ferguson. *Class III.*—McDonald, McNabb, Robertson Gamble.

THIRD YEAR HONOURS.—(*Mineralogy and Lithology.*)—*First Rank.*—None. *Second Rank.*—Macpherson.

SECOND YEAR.—(*Botany.*)—*Class I.*—Lafleur, Smith (*Prize*), Fry, Rogers, Hague (H. J.), Rielle, Trenholme, Barron; Whillans and Walker, equal. *Class II.*—Mackay, Morin, McKillop, Thomas, Parent, Hague (F.), Martin, Stirling. *Class III.*—Cockfield, Guertin, Stewart.

Prizes for Collections of Plants.—1st, Ami; 2d, Lyman.

CHEMISTRY.

FIRST YEAR.—*Class I.*—Bowers, England (*Prize*), Orr, Shearer. *Class II.*—Tait, Gardner, Bland, Hunter, Elliot, Ross, Cameron, Griffith; Lee and Greenshields, equal; Porter. *Class III.*—Marceau, O'Halloran, Brown, Fraser (Donald), Kinloch, Morris, Chipman, Richardson (Alex.), Fraser (Wm.), Barlow.

MORRIN COLLEGE.

B. A. ORDINARY EXAMINATION.

GREEK.—*Class I.*—Hemming, Walker. *Class II.*—Ferguson. *Class III.*—None

LATIN.—*Class I.*—Hemming. *Class II.*—Ferguson, Walker. *Class III.*—None.

MATHEMATICAL PHYSICS.—*Class I.*—None. *Class II.*—Hemming. *Class III.*—Walker, Ferguson.

MENTAL AND MORAL PHILOSOPHY.—*Class I.*—Hemming. *Class II.*—Walker. Ferguson.

ENGLISH HISTORY.—*Class I.*—None. *Class II.*—Hemming. *Class III.*—Walker, Ferguson.

FRENCH.—*Class I.*—Hemming. *Class II.*—Ferguson, Walker.

INTERMEDIATE EXAMINATION.

GREEK.—*Class II.*—Hewitt.
LATIN.—*Class I.*—Hewitt.
MATHEMATICS.—*Class III.*—Hewitt.
LOGIC.—*Class III.*—Hewitt.
ENGLISH.—*Class III.*—Hewitt.
FRENCH.—*Class III.*—Hewitt.

ST. FRANCIS COLLEGE.

INTERMEDIATE EXAMINATION.

GREEK.—*Class II.*—Brown, Duffett.
LATIN.—*Class II.*—Brown. *Class III.*—Duffett.
MATHEMATICS.—*Class II.*—Brown. *Class III.*—Duffett.
LOGIC.—*Class III.*—Brown, Duffett.
ENGLISH.—*Class II.*—Brown, Duffett. *Class III.*—None.
FRENCH.—*Class II.*—Duffett. *Class III.*—Brown.

SUPPLEMENTAL EXAMINATIONS, 1879-80.

PASSED.

I.—September, 1879.

(*a*)—Supplemental Sessional Examinations.

THIRD YEAR.—Bennett.
FIRST YEAR.—Macrae, Westlake.

(*b*)—Supplemental in one Subject.

THIRD YEAR.—Keays, Scriver.
SECOND YEAR.—Gamble, Lawford, McDonald, McNabb.
FIRST YEAR.—Barron, Cockfield, Stewart.

II.—February, 1880.

(Supplemental to Christmas Examinations.)

(*a*)—Supplemental in two or more subjects.

FOURTH YEAR.—Klock, Muir.
THIRD YEAR.—Black, Weir.
SECOND YEAR.—Stirling.
FIRST YEAR.—Marceau, Wheeler, Young.

Partial Student—Supplemental in Latin—McLennan N.

FACULTY OF APPLIED SCIENCE.

GRADUATING CLASS.

JOHN S. O'DWYER.—Lorne Medal and Certificate of Merit for General Standing. Scott Exhibition for Session 1879-1880.

WILFRED T. SKAIFE.—Special Scott Prize.

WILLIAM F. ROBERTSON.—Second Rank Honours in Natural Science.

PASSED THE EXAMINATIONS FOR THE DEGREE OF BACHELOR OF APPLIED SCIENCE.

Civil Engineering.

John Seabury O'Dwyer; James Dudderidge and Wilfred Theodore Skaife, equal.

Mining Engineering.

William Fleet Robertson.

THIRD YEAR.

PASSED THE SESSIONAL EXAMINATIONS.

Drummond, Archbald, Waddell, Richard.

SECOND YEAR.

FRED MILLER.—Prizes in Mechanism, Drawing and Mathematical Physics.

PASSED THE SESSIONAL EXAMINATIONS.

Miller, Green, Low, Burland.

FIRST YEAR.

PASSED THE SESSIONAL EXAMINATIONS.

Smith, McMillan, McTaggart.

STANDING IN SPECIAL SUBJECTS.

REPORTS OR ESSAYS PREPARED DURING THE SUMMER OF 1879.

FOURTH YEAR.—*Class I.*—O'Dwyer (*A Bridge on the G. T. R.*) and Skaife (*The Chaudière Bridge Foundations*), equal; Robertson (*The Ventilation of the Pictou Coal Mines*).

Class II.—Dudderidge (*Levelling*).

THIRD YEAR.—*Class I.*—Drummond (*A Survey of Dominion Lands in Manitoba for Settlement Purposes*).

Class II.—Archbald (*Mortars and Cements*), Waddell (*House Ventilation*).

Class III.—Richard (*A Steam Engine*), Bolton (*a Traverse of the Mississaga River*).

SECOND YEAR.—*Class I.*—Green (*A Bridge on the Harrisburg and Brantford Railway*).
Class II.—Stephen (*Notes on Navigation*), Foster (*A Length of the Q. C. Railway*) and Low (*Hydraulic Cements*), equal.
Class III.—Burland (*The Spur Wheel*), Hague (*Mortar*).

DESCRIPTIVE GEOMETRY.

THIRD YEAR.—*Class I.*—None. *Class II.*—Richard, Archbald. *Class III.*—Drummond, Waddell.
SECOND YEAR.—*Class I.*—Miller. *Class II.*—Foster and Low, equal; Green, Burland. *Class III.*—None.

FREEHAND DRAWING.

FIRST YEAR.—*Class I.*—None. *Class II.*—McMillan and McTaggart, equal; Smith. *Class III.*—None.

SURVEYING.

THIRD YEAR.—*Class I.*—None. *Class II.*—Archbald. *Class III.*—Drummond, Bolton, Richard, Waddell.
SECOND YEAR.—*Class I.*—Miller. *Class II.*—Foster and Green, equal; Low. *Class III.*—Houlahan, Skaife.

PRACTICAL ASTRONOMY.

THIRD YEAR.—*Class I.*—None. *Class II.*—Drummond. *Class III.*—Archbald, Richard, Morkill, Bolton.

MECHANISM.

SECOND YEAR.—*Class I.*—Miller. *Class II.*—Low, Green. *Class III.*—Foster.

MATERIALS.

FOURTH YEAR.—*Class I.*—Skaife, O'Dwyer. *Class II.*—Robertson, Dudderidge.
THIRD YEAR.—*Class I.*—None. *Class II.*—Waddell, Drummond. *Class III.*—Archbald and Bolton, equal; Richard.
SECOND YEAR.—*Class I.*—None. *Class II.*—Green and Miller, equal; Foster.

APPLIED MECHANICS.

FOURTH YEAR.—*Class I.*—None. *Class II.*—O'Dwyer, Dudderidge, Skaife.
THIRD YEAR.—*Class I.*—None. *Class II.*—Drummond. *Class III.*—Bolton, Archbald, Waddell, Richard.

STEAM.

FOURTH YEAR.—*Class I.*—Dudderidge, O'Dwyer, Skaife. *Class II.*—Robertson.

HYDRAULICS.

FOURTH YEAR.—*Class I.*—None. *Class II.*—O'Dwyer, Skaife, Dudderidge. *Class III.*—Robertson.

DOWNWARD-FLOW TURBINES (*Essay*).

FOURTH YEAR.—*Class I.*—O'Dwyer and Dudderidge, equal; *Class II.*—Skaife.

STAMP BATTERIES (*Essay*).

FOURTH YEAR.—*Class I.*—Robertson.

CONTINUOUS GIRDERS (*Essay*).

THIRD YEAR.—*Class I.*—None. *Class II.*—Archbald; Richard and Drummond and Waddell, equal. *Class III.*—Bolton.

ROADS AND ROAD-MAKING.

FOURTH YEAR.—*Class I.*—O'Dwyer, Skaife. *Class II.*—Dudderidge.
THIRD YEAR.—*Class I.*—Drummond, Waddell. *Class II.*—Archbald. *Class III.*—Bolton, Richard.

METEOROLOGY (*Optional.*)

FOURTH YEAR.—*Class I.*—Robertson and Skaife, equal. *Class II.*—Morkill Dudderidge. *Class III.*—None.

DESIGN, SPECIFICATION AND ESTIMATE.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Skaife, O'Dwyer. *Class III.*—Dudderidge, Robertson.

MATHEMATICAL PHYSICS.

THIRD YEAR.—*Class I.*—Archbald. *Class II.*—None. *Class III.*—Drummond, Richard, Waddell.
SECOND YEAR.—*Class I.*—Miller. *Class II.*—None. *Class III.*—Burland.

MATHEMATICS.

THIRD YEAR,—*Class I.*—None. *Class II.*—Archbald, Drummond. *Class III.*—Richard, Bolton, Waddell.
SECOND YEAR.—*Class I.*—None. *Class II.*—Miller. *Class III.*—Green, Low.
FIRST YEAR.—*Class I.*—None. *Class II.*—McMillan. *Class III.*—Smith, McTaggart.

EXPERIMENTAL PHYSICS.

THIRD YEAR.—*Class I.*—None. *Class II.*—Archibald, Richard. *Class III.*—Drummond, Waddell, Bolton, Morkill (*).
SECOND YEAR.—*Class I.*—None. *Class II.*—Burland, Miller; Green and Low, equal. *Class III.*—Foster.

GEOLOGY AND MINERALOGY.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Robertson.
THIRD YEAR.—*Class II.*—Bolton, Drummond, Archibald. *Class III.*—Waddell

ZOOLOGY AND PALÆONTOLOGY.

SECOND YEAR.—*Class I.*—Low. *Class II.*—Foster. *Class III.*—Green, Miller.

BOTANY.

SECOND YEAR.—*Class I.*—None. *Class II.*—Burland.

CHEMISTRY.

FIRST YEAR.—*Class I.*—None. *Class II.*—Smith, McTaggart. *Class III.*—Miller, McMillan.

PRACTICAL CHEMISTRY.

SECOND YEAR.—*Class I.*—None. *Class II.*—Burland.

ANALYTICAL CHEMISTRY.

SECOND YEAR.—*Class I.*—None. *Class II.*—None. *Class III.*—Low.

ASSAYING.

FOURTH YEAR.—*Class I.*—Robertson.

METALLURGY.

FOURTH YEAR.—*Class I.*—None. *Class II.*—Robertson.

ENGLISH.

SECOND YEAR.—*Class I.*—Green, Low. *Class II.*—Burland, Foster, Mille *Class III.*—Skaife.

FIRST YEAR.—*Class I.*—None. *Class II.*—Smith, McMillan. *Class III.*—McTaggart.

FRENCH.

THIRD YEAR.—*Class I.*—None. *Class II.*—Waddell, Richard, Archbald. *Class III.*—Bolton.

SECOND YEAR.—*Class I.*—None. *Class II.*—None. *Class III.*—Green, Low Drummond.

FIRST YEAR.—*Class I.*—None. *Class II.*—None. *Class III.*—McTaggart.

GERMAN.

SECOND YEAR.—*Class I.*—None. *Class II.*—None. *Class III.*—Miller.

Graduates of the University.

DOCTORS OF DIVINITY.

* Bethune, Rev. John (ad eundem) 1843. * Falloon, Rev. Daniel [Hon.].....1844

DOCTORS OF LAWS AND OF CIVIL LAW.

* Abbott, Christopher, B.C.L. [D.C.L. in course].....1862
Abbott, Hon. J. J. C., B.C.L. [D.C.L. in course] 1867
* Adamson, Rev. Wm. A. [D.C.L hon] 1850
Badgley, Hon. Wm. [D.C.L. hon]....1843
* Bancroft, Rev. C., D.D. [LL.D. hon] 1870
Blackwood, Right Hon. Frederick Temple Hamilton, Earl of Dufferin [LL.D. hon]..... 1878
Bond, Rev. Wm., M.A. [LL.D. hon].1870
Campbell, George W., M. A., M.D. [LL.D. hon].....1875
Chamberlin, B., M.A., B.C.L., [D.C.L. in course].....1867
Chauveau, Hon. Pierre J. O., [LL.D. hon].....1857
Cordner, Rev. John [LL.D. hon]...1870
Cornish, Rev. George, M.A. [LL.D. in course].....1872
Cushing, Lemuel, M.A., [LL.D. in course] 1879
Davidson, Charles Peers, M.A., B.C.L. [D.C.L. in course].....1875
* Davies, Rev. Benjamin, Ph.D. [LL.D. hon].....1856
Dawson, John William, M.A. [LL.D. hon].....1857
DeSola, Rev. A. [LL.D. hon].....1858
Douglas, Rev. Geo. [LL.D. hon]....1870
Doutre, Gonzalve, B.C.L. [D.C.L. in course].....1873
* Falloon, Rev. D., D.D. [LL.D. hon].....1862
Gilman, Francis E., M.A., B.C.L. [LL.D. in course].....1877
Girouard, Desiré, B.C.L. [D.C.L. in course].....1874
* Head, Right Hon. Sir Edmund W., Baronet, M.A. [LL.D. hon.] 1862
Hemming, Edward J., B.C.L. [D.C.L. in course].....1871
* Holmes, Andrew F., M.D. [LL.D. hon].....1858
Howe, Henry Aspinwall, M.A. [LL.D. hon].....1870
Hunt, T. Sterry, M.A. [LL.D. hon]...1865
Jenkins, Rev. John (D.D. Univ. N. Y.) [LL.D. hon].....1879
Kerr, William H. [D.C.L. in course].....1873
Kirby, James, M.A., B.C.L. [D.C.L. in course] [LL.D. in course].....1874
Laflamme, Hon. R. G., B.C.L. [D.C.L. in course]..... .. 1873
Lawson, G., Ph.D. [LL.D. hon].....1862
* Lafrenaye, P. R., B.C.L. [D.C.L. in course]..... 1873
Leach, Rev. Wm. T., M.A. [D.C.L. hon].....1849
[LL.D. hon].....1857
* Logan, Sir William E., Kt. [LL.D. hon]..... 1856
* Lundy, Rev. Francis [D.C.L. hon].....1843
Lyall, Rev. W. [LL.D. hon].....1864
McGregor James, M.A. [LL.D. in course].....1880
MacVicar, Rev. D. H. [LL.D. hon]..1870
Meredith, Edmund A., B.C.L. [LL.D. hon].....1857
Miles, Hy. H., M.A. [LL.D. hon]...1866
Morris, Hon. Alexander, M.A., B.C.L. [D.C.L. in course].....1862
Morrison Rev. Jas. D., M.A. (D.D. Union College N. Y.) [LL.D. in course].....1880
Parkman, Francis (M.A. Harvard) [LL.D. hon].....1879
Robins, Sampson Paul, M.A. [LL.D. in course].....1880
Rollitt, Albert K. (LL.D., London Univ.) [LL.D. ad eun].....1871
* Smallwood, Charles, M.D. [LL.D. hon].....1856
* Smith, William Stuart [LL.D. hon] .1858
* Vallieres de St. Real, Hon. J. R. [D.C.L. hon].....1844
Wickes, Rev. Henry [LL.D. hon]...1868
Wicksteed, Richard J., M.A., [LL.D. in course].....1879
Wilkes, Rev. Henry, M.A., D.D. [LL.D. hon].....1870

* Deceased.

Adsetts, John, 1866
Alexander, Robert A., Grimsby, O 1871
Alguire, Duncan. O, Cornwall, O 1873
Allard, Emery, Belœil, Q 1866
†Allen, Hamilton, 1872
Alloway, Thomas Johnson, Montreal 1869
Anderson, Alex., Med. Dept. Indian Army 1866
*Anderson, John C., 1865
Archer, Ths., Wandsworth, Eng 1869
Ardagh, Johnson, Orillia, O 1869
Armstrong, Geo, E., Montreal 1877
*Arnoldi, Daniel [Hon] 1847
Atkinson, Robt., 1862
Ault, Alexander, Ochkosh, Wis 1860
*Ault, Charles, Montreal 1855
Ault, James F., 1855
Ault, Edwin D., Aultsville, Q 1868
Austin, Fred. John, Sherbrooke, Q 1862
Ayer, N., M. A., Woodstock, N B 1880
Aylen, John, Aylmer, Q 1857
Aylen, James, Aylmer, Q 1863
Backhouse, J. B., Braidwood, Ill 1870
Bain, D.S.E., Staff Surgeon Maj. 1868
Bain, Hugh U., Winnipeg Man 1875
Baird, James, Carp, Co. Carlton 1870
Baker, Albert, 1848
Barclay, George E., Parkhill, O 1870
*Barnston, James [ad eun] 1856
Battersby, Charles, Port Dover, O 1861
Baynes, Donald, M. A., Canterbury, Eng 1876
Baynes, George Aylmer, Montreal 1869
Beatty, D., Richmond, O 1862
Beaudet, Alfred, 1865
Beaudry, Lewis B., 1871
Beckstead, M., Lisbon, St. Law. Co., NY 1878
†Bell, James, Montreal 1877
*Bell, John, M. A., 1866
Bell, Robert, Montreal 1878
Bell, Robt. W., Peterboro, O 1873
Belleau, Alfred, Quebec 1852
*Bergeron, Joseph, 1870
Bergin, Darby, Cornwall, O 1847
Bessey, William E., Montreal 1863
Bender, Prosper, Quebec 1865
Benson, Joseph B., Chatham, N B 1875
Bibaud, Jean G., Montreal 1843
Blackader, Alex. D., B. A., Montreal 1871
Blacklock, John J., Chesterville, O 1851
*Blanchet, J. B., 1863
Blair, Robt. C., Chicoutimi, Q 1865
*Bligh, John W., 1865
Bogart, Irvine D., Campbellford, O 1859
*Bomberry, Geo. E., 1875
Boulter, George H., Sterling, O 1852
*Boyer, Louis, 1842
*Boylan, Andrew A., 1857
Boyle, Albert D., 1877
*Bowman, William E., 1860
Bower, Silas J., Kemptville, O 1865
*Bradley, William, 1869
*Brathwaite, Francis H., 1863
Brandon, John, Ancaster, O 1867
Breslin, William Irwin, 46th Regiment 1847
Brigham, Josias S., Philipsburg 1848
Brissette, Henry R., Lowell Mass 1871
Bristol, Amos S., Napanee, O 1850
Brourde, Alphonse, 1863
Brodie, John, Honolulu, Sdwh. Isl. 1877
Brooks, Samuel T., 1851
Brouse, William H., Prescott, O 1847
Brouse, Jacob E., Brockville, O 1861
Brossard, J. B. J., Laprairie, Q 1875
Brown, J. L., Platsville, O 1879
Brown, Peter E., 1863
Brown, Harry, 405 W. Washington St., Chicago 1873
Browne, Arthur A., B.A., Montreal 1872
Bruneau, Adolphe, Sorel 1853
*Bruneau, Olivier T. [Hon] 1843
Bruneau, Onesime, 1851
Bryson, William G., Fenelon Falls, O 1867
Bucke, Richard Maurice, London, O 1862
Bucke, Edward H., 1852
Buckle, John M. C., 1869
Buckley, William P., Prescott, O 1870
Bull, George J., Worcester, Mass 1869
*Bullen, Charles F., 1864
Buller, Frank, Montreal 1879
Burgess, J. A., Gorrie, Co. Huron, O 1868
Burch, Benjamin F., 1866
*Burland, John H., 1863
Burland, Samuel C., Chester, Penn 1877
Burland, Wm. B., Montreal 1872
Burland, William H., Montreal 1875
Burrows, Philip P., Lindsay, O 1866
*Burnham, Robert Wilkins, 1860
Burns, Alfred J., 1854
Burritt, Horatio C., Peterboro, O 1863
Burwash Henry J., Rapid City, N W T 1879
Butler, George C., Brighton, O 1865
Butler, Billa F., 1879
*Buxton, John N., 1849
Cahalan, James, Wyandotte, Mich 1880
Cameron, Duncan H., Emerson, Man 1877
Cameron, James C., Montreal 1874
Cameron, John D., Lancaster, O 1878
Campbell, Donald Peter, 1862
Campbell, Francis Wayland, Montreal 1860
Campbell, G. W., M.A. [ad eun] Montreal 1843
Campbell, J., Waracknabeal, Victoria 1876
*Campbell, Samuel, 1866
Campbell, John, Seaforth, O 1869
Cannon, Gilbert, Almonte, O 1877
Carmichael, Duncan A., Ottawa 1873
Carey, Augur D. L. [ad eun] 1864
Carman, Philip E., 1879
Carman, John B., 1879
Cassidy, David M., 1867
Cassady, John F., Goderich 1865
*Carroll, Robert W. W., 1859
Carson, Augustus, 1843
Carter, Samuel A., 1859
Case, William, Hamilton, O 1879
Casgrain, Charles E., Windsor, O 1851
Cattanach, Andrew J., London, Eng 1871
Chagnon, Vinceslaus G. B., St. Pie, Q 1861
*Challiner, Francis, 1849
Cherry, William, 1869
*Chesley, George Ashbold, 1862
Chevalier, Gustave, Bedford, Q 1860
Chevalier, Napoléon E., Iberville, Q 1873
Chipman, C. J. H., B.A., Prescott, O 1868
Chisholm, Alex., Alexandria, O 1878

Chisholm, Murdoch, Loch Lomond, N S 1879
Christie, George H., Lachute, Q 1872
Christie, John B., 1865
Christie, Thomas, Lachute, Q 1848
Christie, John H., B.A., Merrittown, O 1875
*Church, Charles H., 1862
Church, Clarence R., Ottawa 1868
Church, Coller M., Aylmer, Q 1855
Church, F. W., Aylmer, Q 18·0
Church, Levi R., Montreal 1857
Church, Mills K., Pierrepont Manor, N Y 1864
*Church, Peter H., 1846
Clarke, Octavius H. E., Cahoes, Vt 1870
Clarke, Wallace, B A., Utica, N Y 1871
Clark, Richard A., Oakville, O 1870
Clarke, F. G. B., South Chicago, Ill 1876
Clemesha, John W., Port Hope, O 1867
Clement, Victor A., St. Guillaume, Q 1869
* †Cline, John D., B.A., 1874
Cluness, Daniel, Nanimo, Cal 1870
Codd, Alfred, Winnipeg, Man 1865
Collins, Charles W., 1869
Collison, R., Norfolk, St. Law. Co., N Y 1878
Colquhoun, George, Dunham Flats, Q 1876
Comeau, John B., St. David, Q 1870
Cook, Guy R., B. A., Louisville, N Y 1876
Cook, Hermon L., Napanee, O 1854
Cooke, Charles H., Brantford, O 1866
Cooke, Sidney P., Ottawa, O 1869
Cooke, William H., Drummondville, Q 1876
Copeland, William L., Chicago 1872
* Corbett, A P. M., 1854
Corbett, William H., Surg. Maj. Army Med. Dept. 1854
Corlis, Josiah, St. Thomas, Ont 1869
Corson, John, 1866
Cotton, C. L., Cowansville, Q 1877
*Cowley, Thomas McJ., 1870
Cowley, D. K., Ottawa 1880
Cox, Frank, Charlottetown, P E I 1869
Coyle, Henry W., Sorel, Q 1876
Craig, Thornton 1876
Craik, Robert, Montreal 1854
Cram, Daniel C., 1872
*Crawford, James [ad eun] 1954
Cream, Thomas N., Chicago, Ill 1876
Crichton, Stuart, 1865
Crothers, William, Stanbridge, Q 1876
*Culvers, Joseph B., 1848
*Cunynghame, W. C. Thurlow, 1858
Cutter, Frederick A., 1873
Daly, Guy D. F., 1868
Dansereau, Charles, 1842
Dansereau, Charles, 1869
Dansereau, Pierre, 1835
D'Avignon, F. F., North Adams, Mass 1871
*Dease, Peter Warren, 1847
DeBonald, G. S., Berthier en haut, Q 1862
DeBouchervilie, Charles B., Quebec 1843
DeGrosbois, T. B., Chambly, Q 1868
Demorest, B. G. G., Sterling, O 1852
Desaulniers, Antoine A., Oswego, N Y 1863
DeCelles, Charles D., 1841
Dibblee, G. O., More's Mills, N B 1880
Dice, George, 1864
*Dick, James R., 1842
Dickinson, James S., Cornwall, O 1846
*Dickinson, George, 1868
Dickson, William W., Pembroke, O 1863
Digby, F. Winniett, Brantford, O 1·63
Dodd, John, 1864
Donnelly, Charles H., 1860
*Dorion, Sevère, 1843
*Dorland, Enoch G., 1850
Dorland, James, Milwaukee, Wis 1875
Dougan, William, St. Catharines, O 1867
*Douglass, James [Hon] 1847
Dowling, John F., Egansville, O 1875
Drake, Joseph M., Montreal 1861
Dubuc, Charlemagne, Montreal 1864
*Duckett, Stephen, 1853
Duckett, William A., Montreal 1859
Dufort, Thadée A., 1865
Duhamel, Louis, Wright, Q 1860
Duncan, George, Fareham Hants, Eng 1866
Duncan, Gideon M., Bathurst, N B 1871
Duncan, George C., London, Eng 1875
Duncan, James S., 1858
*Duncan, John, 1871
*Dunn, William Oscar, 1843
Dunsmore, John M., Mitchell, O 1870
Dupuis, Joseph B., 1856
Easton, John, Prescott, O 1852
Eberlé, Harry A., Webster City, Iowa 1876
Edwards, Eliphalet G., London, O 1855
Edwards, J. S., London, O 1880
Edwards, Oliver C., Montreal 1873
Elkinton, A. G., Surg. Maj. Gren. Guards 1862
Ellison, S. R., St. Thomas, O 1873
Emery, Gordon J., Minneapolis, Minn 1857
English, T. F., 1858
*Erskine, John, St. Scholastique, Q 1860
Ethier, Calixte, St. Eugène, O 1867
Evans, Griffith, Vet. Dept. Army, Woolwich, Eng 1864
Ewing, William, Hawkesbury, O 1873
Falkner, Alexander, Alexandria, O 1866
Falls, Samuel K., Wakefield, Q 1875
Farewell, G. McGill, Duffin's Creek, O 1872
Farewell, W. G., 1868
Farley, James T., 1877
Farley, John J., Belleville, O 1873
Faulkner, George W., Sterling, O 1871
Faulkner, D. W, Foxboro, O 1878
Fenwick, George E., Montreal 1847
Fergusson, A. A., Franklin Centre, Q 1864
Fergusson, Alex. R., Dalhousie Mills, O 1866
*Finlayson, John, 1834
Finnie, John T., Montreal, Q 1869
*Fisher, John, 1847
Fitzgerald, James, 1865
Fortier, Louis A., St. David, Q 1878
Fortin, Pierre 1845
Fortune, Lewis M., Huntingdon, Q 1873
*Foster, Stephen Sewell, 1846
Fraleigh, William S., Richmond, O 1869
Fraser, Alex. C., Wallaceburg, O 1877
*Fraser, William, 1836
Fraser, William H., Bay Robert, Nfld 1867
Fraser, Donald M., Stratford, O 1869
Fraser, Donald, Chicago, Ill 1868
Fraser, John R., 1878
Freeman, Charles M., Cape Ireland, N S 1871
Fuller, W., Grand Rapids, Mich 1866
Fuller, Horace L., Sweetsburg, Q 1870
Fulton, James H., Montreal 1863
*Garvey, Joseph, 1852
Gardner H. H., Toledo, Ohio 1878
Gardner, Matthew, California 1871
Gardner, William, Montreal 1867
Gascoyne, Geo. E., Brockville, O 1861
Gaviller, Edwin A., Chippawa, O 1873
Gauvreau, Elzéar, 1855
Gauvreau, Lewis H., 1836
Gendron, Thomas, St. Raymond, Q 1866
Gernon, George W., 1872
*Gibb, George D., 1846

Gibson, John B., Dunham, Q 1855
Gibson, W. B., Cowansville, Q 1878
*Gibson, Edward B., 1864
Gilbert, Henry L., Sherbrooke, Q 1875
Gillis, John A. F., Summerside P E I 1877
Gillies, John, Teeswater, O 1867
Gilmour, Angus, Waterloo, Q 1868
*Giroux, Philippe 1859
Girdwood, Gilbert P., Montreal 1865
Glenn, C. W. E., Chambly, Q 1858
Godfrey, Robert, Montreal 1844
Godfrey, Abraham C., London, Eng 1865
*Goodhue, P. J., 1875
Goforth, Franklin, 1863
Gordon, Robert, Arlington, Ill 1868
Gordon, William Wallace, 1863
Graham, Charles E., Hull, Q 1865
1863
*Graham, Henry,
Graham, Kenneth D., Hull, Q 1875
Grant, Donald J., 1863
Grant, James A., Ottawa 1854
Grant, William, Perth, O 1867
Gray, John S., North Williamsburg, O 1876
Gray, Thomas, Brigus, Nfld 1879
Greaves, Henry C, Barbadoes 1877
Greenwood, F. S., St. Catharines, O 1878
Greer, T. A., C. SS Minia, Halifax, N S 1876
Grenier, L. P. A., Lotbinière, Q 1863
Groves, George H., Carp, O 1879
Guerin, James J. E., Montreal 1878
Guest, Thomas F., St. Mary's, O 1873
Gunn, James, Durham, Co. Grey, O 1861
Gurd, David F., Montreal 1879
Gustin, William Claud, 1863
Hagarty, Dan. M. J., Med. Supt. N W T and Manitoba 1868
*Hall, Archibald [ad eun] 1848
*Hall, James B., 1866
Hall, J. W., 1846
Halliday, James T., Grafton, O 1865
*Hamilton, Andrew W., 1859
Hamilton, Charles S., Belleville, O 1868
Hamilton, John R., Stratford, O 1871
Hamilton, Rutus F., 1861
Hamel, Joseph A., Murray Bay, Q 1856
Hammond, J. H., Minneapolis Minn 1869
Hanover, William, Seaforth, O 1875
Harding, F. W., 1868
Harkin, Henry, Guelph, O 1867
Harkin, William, Vankleek Hill, O 1858
Harkness, John, Dickson's Corners, O 1862
Harkness, Andrew, New Lancaster, O 1869
Hart, George C., 1879
Hannington, E. B. C., Victoria, B C 1875
Hanna, Franklin 1879
Harrison, David Howard, St. Mary's, O 1864
* Hart, Frederick W., 1835
Harvey, Wm. A., 1874
Hayes, James, Simcoe 1866
Heard, C. De W., Charlottetown, P.E.I
Hebert, P. Zotique, Whitehall, N Y 1872
† Henderson, Alexander A., Ottawa, O 1870
*Henderson, E. G.,
Henderson, Peter, A.M., 1848
Henderson, And., Montreal 1880
* Henry, Walter (Hon) 1853
* Henry, Walter J., 1856
Henwood, Alfred J., Brantford, O 1879
Hervey, Jonas J., 1866
Hethrington, Harry, Stanstead, Q 1872
Hickey, Charles E., Morrisburg, O 1866
Hickey, Samuel A., B.A., Aultsville, O 1874
Hils, Joseph, 1873
Hingston, W. H., Montreal 1851
Hockridge, Thos. G., London, Eng 1874
* Holden, Rufus 1844
Holwell, John, 1868
* Holmes, Andrew F. [ad eun] 1843
Howard, James, Lachine, Q 1867
Howard, Robert, St. Johns, Q 1872
Howard, R. Palmer, Montreal, Q 1848
Howden, Robert T., Perth, O 1857
Howey, W. H., Delhi, O 1878
Howitt, William H., Brantford, O 1870
Howland, Francis L., Huntsville, O 1867
Hulbert, E. Augustus, Brooklyn, N Y 1860
Hume, William L., Leeds, Q 1875
Hunt, Henry, Williamstown, O 1876
Hunt, J. H., Surg. Maj. Army Med. Dept 1869
Hunt, Lewis G., Sheffield, Eng 1878
† Hurd, Edward P., 1865
Hurlbert, George W., 1859
Hurlbert, Richard F., Brucefield, O 1873
Hutchinson, John A., Wingham, O 1878
Imrie, A. W., Montreal 1879
Inksetter, D. G., West Flamboro, O 1880
Irvine, James C., Elora, O 1866
Irwin, J. L., Montreal, Q 1879
Ives, Eli, Coaticook, Q 1863
* Jackson, A T., 1846
Jackson, Wm. Fred., Brockville, O 1873
Jackson, Joseph A., Franklin Falls, Vt 1879
Jamieson, Alexander, B. A., 1877
Jamieson, Thomas A., Lancaster, O 1875
Jamieson Chas. J., Rockland, O 1879
Johnson, James B., London, Eng 1876
Johnston, J. C., Surg. Maj. Army 1867
Johnston, Thomas G., Sarnia 1871
Jones, Charles R., 1874
Jones, George N., 1874
* Jones, Thomas W. [ad eun] 1854
* Jones, Jonathan C., 1865
Jones, Wm. Justus, Prescott, O 1856
Jones, H. J. M., Wabash Av., Chicago 1873
Kearney, Wm. J., Montreal 1875
Keefer, Wm. N., B. A., Bengal Army 1869
* Keeler, Thomas 1859
† Kelly, Clinton Wayne, Louisville, Ky 1867
* Kelly, Wm., 1846
† Kelly, Thomas, Durham, O 1873
Kempt, William, Lindsay, O 1864
Kennedy, Richard A., Montreal 1864
* Kerr, James, 1858
Killery, St. John, Surg. Maj. Army 1862
King, Wm. M. H., St. Sylvestre, Q 1859
King, Reginald A. D., Compton, Q 1868
King, Richard, Peterboro, O 1867
* Kirkpatrick, A., 1856
Kittson, John G., Surg. North West Mounted Police 1869
Kittson, Edmund G., Hamilton, O 1873
Knowles, James A., 1866
Kollmyer, Alex. H., Montreal 1856
Laberge, Ed., St. Philomène, Q 1856
Lane, John A., Oswego, N Y 1877
Lang, Christopher L., Owen Sound, O 1876
* Lang, Thos. D., 1866
Langlois, O. X., Windsor, O 1875
Langrell, Richard T., Eau Claire, Wis 1865
Larocque, A. B., Montreal, Q 1847
Law, W. C., Bond Head, O 1863
Law, William K., 1877
† Lawford, John B., London, Eng 1879
Lawrence, Henry J. H., Surg. Maj. 3rd Grenadier Guards 1862
Leavitt, Julius, 1866
Leclerc, George, Montreal 1851

Leclair, Napoléon, Lancaster, O 1861
Lee, James, C., 1856
* Lee, John Rolph 1848
Lefebvre, John M., Brockville, O 1879
Legault, D., Salaberry de Valleyfield 1868
Lemoine, C., St. Pierre, Ile d'Orléans 1850
Lepailleur, Leonard, St. Martine, Q 1848
Leprohon, John L., Montreal 1843
Levi, Reuben, Inverness, Q 1876
Lindsay, Heriot, St Johns, Q 1861
Lister, James, 1862
Lloyd, H. W., London, O 1879
* Locke, C. F. A., 1872
Logan, David D., 1842
Logan, Robt., Iona, Mich 1880
Logie, William, 1833
* Long, Alexander, 1844
Longley, Edmund, 1866
Longpré, Pierre F., 1848
Loupret, André, 1850
Loux, William, Russell, O 1870
Loverin, Nelson, Montreal 1855
Lovett, William, 1879
† * Lucus, T. D'Arcy, 1869
Lundy, E. L., Surg. Maj. Army 1862
Lyford, Chs. C., Minneapolis, Minn 1879
Lyon, Arthur, Shawville, Q 1861
Maas, Rudolph, Negaunee, Mich 1880
*MacDiarmid, John D., 1847
MacDonald, Angus, St. Paul, Min 1863
* MacDonald, Colin, 1853
MacDonald, Roderick A., Surg. Prov. Penitentiary, Ma 1874
MacDonell, Æneas, 1849
MacDonnell, Richard L., B. A., Montreal 1876
MacFarlane, William, Almonte 1869
Macfie, James, W Covington, N Y 1869
MacIntosh, Robert, Meaford 1863
Mack, Francis Lewis, Arden, O 1862
* Mackie, J. R., 1865
* Macklem, Samuel S., 1859
MacLean, Archibald, Sarnia, O 1867
* Macnabb, Francis A. L., 1870
McArthur, Robert D., Chicago, 1867
McArthur, John A., Port Elgin O 1879
McBain, John, Martintown, O 1874
McCallum, Duncan C., Montreal 1850
McCann, J. J., B. A., Hopkinton, Mass 1878
McCarthy, W., Chicago, Ill 1867
McConkey, T. C., Barrie, O 1872
McConnell, John B., Montreal 1873
* McCord, John D., 1864
McCormick, Andrew G., Durham, Q 1874
McCrimmon, Donald A., Lucknow, O 1869
McCrimmon, John, Woodville, O 1878
McCrimmon, Milton, Palermo, O 1878
McCullough, George, St. Mary's, O 1879
* McCulloch, Michael (Hon) 1843
McCully, Oscar J. M. A., Baie Verte, N B 1879
McCurdy, John, Chatham, N B 1866
McDermid, Wm., Dunvegan, O 1875
McDiarmid, Donald, Athol, O 1867
McDiarmid, James, Prospect, Co. Lk., O 1873
† McDonald, John A., Montreal 1880
McDonald, Jos. D. A., 1873
McDonald, R. C., Perth, O 1880
McDonald, Roderick, Cornwall, O 1834
McDonell, Alex. R., Alexandria, O 1874
McDonell, Angus C., Montreal 1852
McDougall, Peter A., Ottawa, O 1864
McDougall, Peter A., 1847
McEachran, W., Montreal 1880
McEwen, Findlay, Carlton Place, O 1870
McGarry, James, Drummondville, O 1858
McGeachy, William, Iowa, O 1867
McGill, William, Oshawa 1849
McGillivray, Donald, Ottawa 1861
McGowan, Henry W., Bolton, Q 1867
McGrath, Thomas, 1849
McGregor, Duncan, Chatsworth, O 1861
McGuigan W. J., Port Edward, O 1879
McGuire, Bernard D., 1873
McIlmoyl, Henry A., Clayton, N Y 1876
McInnes, Walter J., East Saginaw, Mich 1865
McIntosh, James, Rapid City, N W T 1859
McIntosh, Donald J., Vankleek Hill, O 1870
McIntyre, Peter A., Souris, P E I 1867
McKelcan, George Lloyd, Hamilton 1860
McKenzie, B. E., B. A., Richmond Hill, O 1880
McKay, John, Woodville, O 1869
McKay, Walter, Woodburn, O 1854
McKinley, John K., Portage du Fort, Q 1878
McLaren, Peter, Ormstown, Q 1869
McLaren Peter, Paisley, O 1861
McLaren, Peter, 1872
McLaren, D. C., B.A., Montreal, Q 1880
McLean, Alexander, 1860
McLeod, James, Charlottetown, P E I 1873
McMicking, George, Goderich, O 1851
McMillan, Æneas J., Edwardsburg, O 1874
McMillan, Louis J. A., Rigaud, Q 1860
McMillan, John, 1857
McMurray, Samuel, 1841
* McNaughton, E. P., 1834
McNee, Stewart, Portage du Fort, Q 1879
McNeece, James, 1869
McNeill, Ernest, Orwell, P E I 1878
McNulty, M., Iroquois, O 1880
McQuillen, James, Marquette, Mich 1874
McRae, George, Ottawa, O 1876
McTaggert, Alexander, Parkhill, O 1869
McVean, John M., 1865
Madill, John, Thornton, O 1867
Major, George W., B. A., Montreal 1871
Malcolm, John Rolph, Scotland, O 1861
* Malhiot, Alfred, 1846
Malloch, Edward C., Ottawa, O 1863
Malloch, William B., Brockville, O 1867
Mallory, Albert E., 1872
Marceau, Louis T., Napierville, Q 1872
Markell, Richard S., 1867
* Marr, Israel P., 1849
Marr, Walter H., 1859
Marston, Alonzo W., Montreal 1871
Marston, John J., 1863
Mason, James Lindsey, M.A., 1863
Mattice, Rich. J., Cornwall 1875
† Matheson, John H., St. Mary's, O 1871
* Mathieson, Niel, 1870
Mayrand, William, St. Andrews, Q 1847
Meane, John, Staff Srg. Maj. Army 1869
Meek, James A., New York 1875
* Meigs, Malcolm R., 1865
Menzies, John B., 1879
* Meredith, Thomas L. B., 1842
Metcalfe, Henry J., 1876
Mignault, Henri A., St. Denis, Q 1860
Mignault, L. D., B.A., Montreal 1880
Miller, Robert, 1870
Mills, Thos. W., M.A., Hamilton 1878
Miner, Frank L., Honolulu Swh. Is 1877
* Mines, William W., 1874
Mitchell, Fred. H., London 1871
Moffatt, John Edward, Staff Surg. Army 1862
Moffatt, Walter, Quebec 1868
Molson, William A., Montreal 1874
Mongenais, Napoléon, Rigaud, Q 1865
Monk, Geo. H., St. Thérèse, Q 1875

Moore, Charles S., London, O 1874
Moore, Jehiel T., Port Burwell, O 1874
Moore, Joseph, 1852
Moore, Richard, 1853
Moore, Robert C., 1869
* Morin, Josh (Hon), 1850
* Morrison, David R., 1869
Morrison, John, M.A., Waddington, N Y 1872
Mount, John W., Montreal 1851
Munro, Alexander, Montreal 1876
Munro, James T., 1872
Murray, Charles H., B.A., H M Indian Army 1876
Neilson, W. J., Perth, O 1878
Nelles, Jas. M., Canton, Ill 1875
Nelles, John A., London, O 1850
* Nelson, Horace, 1861
* Nelson, Wolfred (Hon) 1848
Nelson, Wolfred D. E., Bermuda, W I 1872
Nicol, William R., Watkins, N Y 1872
Nicholls, Chas. R., Surgeon Major, Army 1862
Nesbitt, James A., 1868
Norton, Thomas, Hornings Mills, O 1874
Oakley, William D., Dunham, Q 1877
O'Brien, Thomas B. P., 1862
O'Brien, Robert S., Grenville, Q 1873
O'Brien, David, Renfrew, O 1873
O'Callaghan, Cornelius H., 1854
O'Callaghan, T. A., B.A., Worcester, Mass 1880
* O'Carr, Peter, 1857
* O'Connor, Daniel A., 1867
O'Dea, James Joseph, Long Island, U S 1859
Odell, William, Surgeon 19th Regiment of the Line 1849
O'Leary, James, St. Pascal, Q 1866
O'Leary, Patrick, Montreal 1859
Oliver, James W., Clifton, O 1868
O'Reilly, Charles, Toronto, O 1867
Osler, William, Montreal 1872
* Padfield, Charles W., 1868
Painchaud, Edward, S. L., Varennes, Q 1848
Palmer, Loran L., Toronto, O 1867
* Paquin, Jean M., 1843
Paradis, Henri, 1846
Paradis, Pierre E., Coaticook, Q 1867
* Park, George A., 1877
Parker, Rufus S., 1866
Parke, Charles S., Quebec 1866
* Paterson, James M., 1855
Paterson, James, Almonte, O 1864
* Pattee, George, 1858
Pattee, Richard P., Plantagenet, Q 1874
Pallen, Montrose A., New York 1864
* Patton, Edward K., 1867
Pegg, Austin J., Cayuga, O 1872
Pegg, Charles H., 1867
Perrault, Victor, 1852
Perrier, John, Cleveland, Ohio 1868
Perrigo, James, M.A., Montreal, 1870
Perry, H. R., Coteau Ldg., Q 1873
Phelan, C. J. R., Waterloo, Q 1865
Phelan, James B., London, O 1874
* Phelan, Joseph P., 1854
Philip, David L., Brantford, O 1861
* Picault, A. C. E., 1852
Pickup, John W., Brockville, O 1867
Pinsoneault, B., Montreal 1880
* Pinet, Alexis, 1840
Pinet, Alex. R., St. Laurent, Q 1867
Poole, H. E., Wakefield, Q 1880
Poussette, A. Courthope, Sarnia 1860
Powell, Israel Wood, Victoria, B C 1860
Powell, Newton W., Cobourg, O 1850
† Powell, Robert H. W., Ottawa 1876
Powers, George W., Eaton, Q 1861
Powers, Lafontaine B., Port Hope, O 1867
Pringle, George, Cornwall, O 1855
Pringle, A. F., Cornwall, O 1880
Prosser, Wm. O., Newington, O 1874
Proudfoot, John S., 1868
Proudfoot, Alex., Montreal 1869
Proulx, Philéas, Terrebonne, Q 1844
Prevost, E. Gilbert, 1859
Pulford, F. W., Winnipeg, Man 1880
* Quarry, James J., 1868
Quesnel, Jules M., 1849
Rea, John Hamilton (Hon) 1853
Rainville, Pierre, 1863
Rambault, J., Dept. Insp Gen. Army 1859
Rattray, Charles J., Cornwall 1871
Rattray, James C., Cobden, O 1874
Raymond, Olivier, Montreal 1850
Read, Herbert H., Halifax, N S 1861
Redner, Horace P., Londsdale, O 1864
Reddick, Robert, West Winchester, O 1874
Reddy, Herbert L., B.A., Montreal 1876
Reddy, John (ad eun) Montreal 1856
Reed, Thomas D., Montreal 1871
Reed, John A., 1871
Reid, Alex. Peter, Halifax, N S 1858
Reid, Kenneth, 38 W. 26th st, New York 1864
Reynolds, Robert T., 1836
* Reynolds, Thomas, 1842
Richard, Marcel, 1864
Richmond, P. E., Mount Pleasant, Minn 1873
Ridley, Henry Thomas, Hamilton, O 1852
* Riel, Etienne R. E., 1857
Riley, Oscar H., Moer's Forks, Clinton Co. N Y 1874
Rinfret, Ferdinand R., Quebec 1868
* Rintoul, David M., 1859
Richardson, John R., Quebec 1865
Riordan, B. L., Allan's Line S S 1880
Ritchie, Arthur F., B.A., Duluth, Minn 1876
Ritchie, John L., Army Med. Dept. 1874
* Roberts, Edward T., 1859
Roberts, John E., B.A., Jamaica, W I 1867
Robertson, James E., Montague, P E I 1865
Robertson, David, Milton, O 1864
Robertson, David T., Lennoxville, Q 1857
Robertson, Patrick, St. Andrews, Q 1867
Robillard, Adolphe, Ottawa 1860
Robinson, Stephen J., Brantford, O 1876
Robinson, Wesley, Markham, O 1872
Robitaille, Louis, New Carlisle, Q 1860
Robitaille, L. T., Quebec 1858
† Roddick, Thomas G., Montreal 1868
Rodger, Thomas A., Montreal 1869
Rogers, Amos, Ottawa 1874
Rooney, R. F., Colfax, Placer Co, Cal 1870
† Ross, George, M.A., Montreal 1866
Ross, G. T., Montreal 1880
Ross, Thomas, Woodlands, Ca 1863
Ross, Henry, 1872
Ross, William G., 1871
Ross, Wm. D., Buckingham, Q 1875
Rugg, Henry C., 1865
Rumsey, William, 1859
Rutherford, M. C. Kenyon, Minn 1879
Ruttan, Allen, Napanee 1852
Ruttan, A. M., Napanee 1880
* Sabourin, Moise, 1849
Sampson, James (Hon) 1847
Sanderson, George W., Orillia 1850
Savage, Thos. Y., 1854

Savage, Alex. C., Ottawa 1866
Sawyer, James H., Millbank, O 1863
Schmidt, Samuel B., Montreal 1847
* Scholfield, David T., Welland 1854
Scott, John G., Bear Brook, O 1879
Scott, Stephen A., 1869
Scott, Wm. E., Montreal 1844
Scott, Wm. F., Ottawa, O 1875
* Scriven, George Augustus. 1846
Seager, Francis R., Millbank, O 1870
Secord, Levi, Bright, O 1876
Setree, Edward W., Huntsville, N Y 1878
Seguin, André, 1848
Senkler, A. E., St. Paul, Minn 1863
Seymour, M. M., Montreal 1879
* Sewell, Stephen C. (ad eun) 1843
Sewell, Colin (ad eun) Quebec 1869
Sharpe, Wm. James, 1872
Shaw, W. F., Gravenhead, O 1879
Shaver, Peter Rolph, Stratford, O 1854
* Shaver, R. N., 1857
Shepherd, Francis J., Montreal 1873
Sherk, George, Cheapside, O 1865
Shoebottom, Henry, Port Huron, Mich 1857
* Simard, Amable, 18-2
Simpson, Thomas, Montreal 1854
Sinclair, Coll, Aylmer, O 1874
Small, H. B., Dominion Line SS. 1880
Smallwood, John R., St. Clet, Q 1868
Smellie, T. S. T., M.A., Pr. Arthur's Ldg., O 1877
Smiley, J. S., St. Lambert, Q 1880
Smith, Daniel D., 1868
Smith, Daniel F., 187-
* Smith, Edward W., 1859
Smith, John, Emerson, Man 1879
Smith, Norman A., 1870
Smith, William, Lachute, Q 1876
Smythe, T. W., 1848
Snider, Frederick S., Simcoe, O 1856
Sparham, Terence, Brockville, O 1841
Speer, Andrew M., Danville, Q 1874
Spencer, R., Montreal 1879
* Squire, William Wood, M.A., 1864
Stafford, Fred. J., Newfoundland 1878
Stanton, George, Simcoe, O 1868
Stark, George A., Milwaukee, Ohio 1872
* Staunton, Andrew Aylmer 1846
Stevens, Alex. D., Dunham, Q 1857
Stevenson, Charles N., Canada Pacific Railway 1876
Stevenson, Hans, Wakefield, Q 1880
Stevenson, J. M., Bryanston, O 1856
Stevenson, John A., London, O 1873
* Stevenson, John L., 1855
Stevenson, Robert A., Strathroy, O 1871
Stewart, Alexander, 1872
Stewart, John Alexander, 1862
Stewart, James, Brucefield, O 1896
Stewart, J. O., St. Anicet 1868
Stephenson, James, Iroquois, O 1850
Stimpson, Alfred O., Thompson, Pa. 1868
St. John, Leonard, Chicago, Ill 1874
Storrs, Arthur, Cornwallis, N S 1876
Stowbridge, James Gordon, 1862
Stroud, Charles S., 1876
Sutherland, Fred. Dunbar, 1861
Sutherland, Walter, Valleyfield, Q 1874
* Sutherland, William, 1836
* Sutherland, William, 1870
Sutherland, William R., Montreal 1879
Switzer, Egerton R., Salina, Ks 1865
Tabb, Silas E., M.A., Sherbrooke, Q 1869
Tait, Henry, Thomas, 1860

Taylor, Wm. H., Peterboro, O 1859
Taylor, Sullivan A., 1870
Tew, Herbert S., Wakefield, York E. 1864
Temple, James A., Toronto 1865
Thayer, Linus O., Montreal 1859
Theriault, F. D., 1863
Therien, Honoré, Bedford, Q 1863
* Thomson, James, 1842
Thompson, Robert, Montreal 1852
Tracey, A, W., West Meriden, Conn 1873
Trenholme, Edward Henry, Montreal 1862
Trudel, Eugène H., Montreal 1844
Turgeon, Louis G., Montreal 1860
Tuzo, Henry A., 1853
† Tunstall, Simon J., B.A., St. Anns, Q 1875
Ussher, Henry, Walkerton, O 1861
Vannorman, Jonathan M., 1850
Vercoe, Henry L., Egmondville, O 1865
Vicat, John R., Melbourne, O 1867
† Vineberg, Hiram N., New Zealand 1878
Wagner, A. Dixon, Dickinson's Ldg., O 1872
* Wagner, William H., 1844
Wakeham, William, Gaspé, Q 1866
Wales, Benjamin N., Buckingham, Q 1874
* Walker, Robert, 1851
Wallace, Isaac U., Milton, Q 1874
Walsh, Edmond C., Madrid, N Y 1866
Walton, George O., Barbadoes, W I 1873
Wanless, John R., New Zealand 1867
Ward, William T., 1873
Ward, Michael O'B., Montreal 1875
Warren, Frank, Brooklin, O 1872
* Warren, Henry, 1860
Waugh, William, London, O 1872
Weagant, C. A., Yarker, O 1879
Webb, James T. S., Montreal 1871
Webster, Arthur D., Edinburgh, S 1878
Weilbrenner, Remi Claude, Cap Santé 1851
Weir, Richard, 1852
Wherry, John, 1862
Whitecomb, Josiah G., 1848
Whiteford, James W., Ottawa 1873
Whiteford, Richard, Detroit, Mich 1857
Whitwell, W. P. O., Philipsburg, Q 1860
Whyte, Joseph A., Sherbrooke, Q 1870
Wigle, Hiram, Wiarton, O 1875
* Widmer, Christopher (Hon) 1847
Wilcox, Marshall B., 1868
Williston, H. V., M.A., Newcastle, N B 1879
Wilson, Benjamin S., Belleville, O 1866
Wilson, Robert M., 1850
Wilson, William, Ottawa 1857
* Wilscam, John Wilbrod, 1846
Wolverton, Algeron, B.A. Hamilton, O 1867
Woods, David, Staff Surgeon, Army 1860
Wood, George C., 1849
Wood, George, Faribault, Minn 1863
Wood, Hannibal W., Knowlton, Q 1865
Woods, Jno. J. E., Aylmer, Q 1875
Woodfull, Sam., Pratt. Asst. Surgeon Royal Artillery 1864
Woolway, C. J., St. Mary's, O 1875
* Workman, Benjamin, 1853
Workman, Joseph, Toronto 1-35
Worthington, Edward (ad eun) Sherbrooke 1868
Wright, John W., B.A., 1878
Wright, Henry P., Ottawa 1872
Wright, Stephen, Newton, O 1859
Wright, William, Montreal 1848
Wye, John A., 1868
Young, Philip R., Clarenceville 1876
Young, Robert C., 1873
Youker, William, Stirling, O 1870

* Deceased.

† Holmes Medallist.

MASTERS OF ARTS.

(For Addresses see list of Bachelors of Arts and of App. Sci.)

Allworth, Rev. John, B.A.....1875
Amaron, Rev. Calvin E., B.A 1880
Archibald, John S., B.A.....1877
* Bancroft, Rev. Charles (ad eun)...1856
Bancroft, Rev. C., Junior, B.A.....1870
Baynes, Donald, B.A.....1867
Bethune, Meredith Blenkarne, B.A..1869
* Bothwell, John A., B.A 1868
Bowman, Wm. M.....(Hon).....1859
Boyd, John, B.A.....1864
Butler, Rev. John.....(Hon)..... ..1852
Cameron, Rev. James, B.A.....1874
Carmichael, Rev. J., B.A..... 1871
Chamberlin, Browne, B.C.L. (ad eun).....1857
Chandler, George H., B.A.....1879
Chapman, Rev. Charles, M.A., London Univ. (ad eun).....1872
Clarke, Wallace, B.A., M.D.....1872
Clowe, John D., B.A.....1874
Cornish Rev. George, B.A..... 1863
Crothers, Rev. William J., B.A.....1875
Cushing, Lemuel, B.A., B.C.L.....1867
Dart, William J., B.A.....1874
Davidson, Rev. James, B.A.....1866
Davidson, Charles P., B.A., B.C.L.1867
Davidson, Leonidas H., B.A.....1867
Dawson, William B., B.A.....1879
Dey, Rev. William J., B.A.....1875
DeWitt, Caleb J., B.A.....1864
Dickson, George, M.A., Victoria Col. (ad eun).....1879
Dougall, John Redpath, B.A.....1867
Duff, Rev. Archibald, B.A.....1867
Duncan, Alexander E., B.A.....1875
Ells, Robert, B A.....1875
Empson, Rev. John, B.A.....1879
Forneret, Rev. George A., B.A.....1880
* Gibb, George D., M.D...(Hon).... 1856
Gibson, Thomas A.....(Hon).....1856
Gilman, Francis E., B.A.....1865
Gould, Edwin, B.A.....1860
Graham, John H.....(Hon).....1859
Green, Joseph, B.A.....1864
Hall, Rev. Wm., B.A.....1867
Hart, Lewis A., B.A.....1869
Hicks, Frank W., B.A.....1870
Hindley, Rev. John, B.A.....1873
Howe, Henry Aspinwall...(Hon)....1855
Jones, Montgomery, B.A.....1873
Kahler, Frederick A., B.A.....1872
Kemp, Rev. Alexander F...(Hon)...1863
Kennedy, George T., B.A.....1872
Kennedy, Rev. John, B.A. 1860
Kirby, James, B.A., B.C.L.....1862
Krans, Rev. Edward H., B.A.....1875
Laing, Rev. Robert, B.A.....1877
* Leach, Robert A., B.A., B.C.L....1860
Lyman, Henry H., B.A.....1880
McCord, David R., B.A., B.C.L...1867
McGregor, Duncan, B.A.....1874
McGregor, James, B.A.....1868
* McIntosh, John, B.A.....1873
McLaren, John R., B.A.....1868
McLennan, Rev. Duncan H., B.A...1875
Markgraf, Charles F. A...(Hon).....1865
Mason, James L., B.A.....1863
Mattice, Corydon J., B.A.....1862
Morris, Alex., B.A., B.C.L.....1852
Morrison, Rev. James D., B.A.....1868
Morrison, John, B.A..... 1870
Munro, Rev. Gustavus, B.A.....1874
* Perkins, John A., B.A.....1862
Perrigo, James, B A.....1869
* Plimsoll, Reginald J., B.A.. 1867
Ramsay, Robt. A., B.A., B.C.L...1867
Robins, Sampson Paul, B.A.....1868
* Rodger, David.....(Hon.)..... 1856
Ross, George, B.A., M.D.....1866
Roy, Rev. James, M.A., Victoria Col. (ad eun).....1879
Shaw, Rev. W. J., M.A., Victoria Col. (ad eun).....1880
* Stewart, Rev. Colin Campbell, B.A. 1870
Tabb, Silas Everett, B.A 1869
Thorburn, John.....(Hon).....1861
Trenholme, Norman W., B.A., B.C.L 1867
Torrance, Rev. Edward F., B.A.....1874
Wallace, Rev. R. W., B.A.....1875
Ward, George B., B.A.....1880
Wicksteed, Richd. J., B.A., B.C.L..1866
* Wilkie, Daniel.....(Hon).....1869
Wilson, John, B.A.....1870
Wotherspoon, Ivan Tolkein, B.A....1869

* Deceased.

MASTERS OF ENGINEERING.

Dawson, William B., B.A., Ba. App. Sci.....1880
McLeod, Clement H., Ba. App. Sci.....1878

BACHELORS OF CIVIL LAW.

* Abbott, Christopher C.....1850
Abbott, Harry, 11 Hospital St. Montreal.1878
Abbott, John J. C., 11 Hospital St. Montreal 1854
Abbott, John B., 11 Hospital St. Montreal 1874
Adam, Joseph, 38 St. James St. Montreal.1878
Adams, Abel, Waterloo.....1867
Allan, Irvine.....1862
Alguire, J. C., Montreal 1880
‡ Archibald, John Sprott, M.A., 112 St. François Xavier St. Montreal.....1870
Archambault, Henri.....1874
Archambault, Joseph L.C., 488 Craig St. Montreal 1871
Armstrong, Louis, 11 St. James St. Montreal.....1861
Ascher, Isidore G., Montreal 1863
‡ Atwater, Albert W., Montreal.....1880
Austin, Joseph E., Montreal.....1880
Aylen, John, M.D., Aylmer, Q.....1861
Aylen, Peter, B.A.....1854
* Badgley, Frank H.....1852
Bagg, Robert Stanley Clark, 19 St. James St. Montreal 1871
Bampton, Geo. E., Lachute 1879
Barnston, John G., Manitoba.....1856
Barry, Denis, 6 St. James St. Montreal.1872
Baynes, Edward Alfred, McGill College.1867
Baynes, O'Hara, 11 Hospital St. Montreal 1874
Beaudin, Siméon, 44 St. Vincent St. Montreal.....1878
Beauchamp, Joseph, 89 St. James St. Montreal 1878
Bergeron, Horace, Beauharnois, Q....1877
Benjamin, Lewis N., 162 St. James St. Montreal 1863
Beaubien, Nap. H., Yamachiche, Q....1877
Berthelot, Louis H., 7 Beaver Hall Sq., Montreal 1878
Berthelot, Joseph B., Montreal.....1880
‡ Bethune, Meredith B., M.A., 11 St. Sacrament St. Montreal 1869
Birny, Jean B. S., Montreal.....1880
Bisaillon, François Joseph, 11 Place d'Armes Hill, Montreal.....1876
Bissonette, Louis A., 36 St. Vincent St. Montreal 1878
* ‡ Bothwell, John A., B.A. 1866
Bouthillier, Charles F., 57 Union avenue, Montreal 1867
Boyd, John, B.A., Toronto 1864
Bowie, Duncan E., Montreal 1873
Brakenridge, James W., Montreal.....1880
Branchaud, Athanase, 14 St. James St. Montreal 1862
Brooke, C. J., Richmond, Q.....1878
Bullock, Wm. E., B.A.....1863
Busteed, E. B., 273 Bleury St. Montreal.1879
Butler, Thomas P., 34 St. James St. Montreal.....1865
Calder, John, 67 St. Sulpice St. Montreal1871
Capsey, George, Bedford, Q.....1877
Carden, Henry.....1860
Caron, Adolphe P., Quebec 1865
Carter, Christopher B., 103 St. François Xavier St. Montreal.....1866
Carter, Edward, Q.C., Montreal.....1864
Carter, George F., 31 Cadieux St. Montreal.....1879
Chamberlain, Brown, Ottawa.....1850
Chamberlain, John, Junr.....1867...
Chambers, A. Busteed, Napanee.....187(
Charland, Alfred 1862
Charrette, Pierre P., Montreal.....1877
Chauret, Améuée, Montreal.....1873
Chauveau, Alexandre, Quebec.....1867
Choquette, Frs. X.....1874
Choquet, Ambroise, 42 St. Sulpice St. Montreal 1865
Cornell, Z. E., 112 St. François Xavier St. Montreal.....1879
Couillard, Edouard, 56 St. Gabriel St. Montreal 1875
Couillard, Jean B.....1866
Coutlée, Lewis W. P., Hull, Q.....1873
Conroy, Robert Hughes, Aylmer.....1869
Cooke, Joseph P., Montreal.....1880
Cowan, Robert C., 235 St. James St. Montreal 1862
Creighton, J. G. Aylwin, Montreal.....1880
* Crimmen, W. J.....1878
Cross, A. S., 182 St. James St. Montreal.1878
Crothers, Robert A., B.A., Bedford Q...1878
Cruikshank, William G., 60 St. James St. Montreal.....1872
Curran, Joseph C.....1862
Cushing, Charles, 110 St. James St. Montreal.....1869
Cushing, Lemuel. Junr., M.A., 217 St. James St. Montreal.....1865
Daly, J. G.....1858
Dansereau, Arthur, Montreal 1865
Dansereau, Clément, 62 St. Hubert St. Montreal.....1877
Darby, Daniel, Waterloo.....1870
Darey, Pierre J., M.A., Montreal.....1868
David, Alphonse, 186½ Notre Dame St. Montreal.....1872
Davidson, Charles P., M.A., 182 St. James St., Montreal.....1863
Davidson, Leonidas Heber, M.A., 217 St James St Montreal.....1864
Day, Edmund T., 192 Notre Dame St. Montreal 1863
De Beaumont, Alfred L., Montreal.....1880
Decary, Aldéric, 188 St. Denis St. Montreal 1879
De Martigny, Charles L., Montreal.....1880
Desaulniers, Alexis L. 1861
Desaulniers, Henri Lesieur, Montreal...1864
Desaulniers, Dionis, 223 Notre Dame St. Montreal.....1876
Desmarais, Odilon, St. Hyacinthe.....1876
Des Rivières, Rodolphe, 15 St. Vincent St. Montreal.....1875
Desrochers, Jean L. B.....1863
Des Rosiers, Joseph, 221 St. Lawrence St. Montreal.....1873
Doak, George O., Coaticook, Q.....1863
‡ Doherty, Charles J., 50 St. James St. Montreal.....1876
Doherty, Thomas J., 50 St. James St. Montreal.....1868
Dorion, Adélard A. L., 160 Notre Dame St. Montreal 1862
Dorion, Louis C. W., 24 St. James St. Montreal.....1877
Doré, Pierre J., Laprairie.....1880
Doutre, Pierre 1858
* Doutre, Gonzalve.....1861
Driscoll, Netterville H., 64 St. James St. Montreal.....1861
* Drummond, William D.....1867
Dubuc, Joseph, Manitoba.....1869

:real.....1866
.....1858
.....1850
.....1852
a, Me., U.S..1880
.....1858
C.L. (†N),
.....1862
.....1880
.....1857
al..... 1879
real.....1873
eal 1876
t 3rd St.,
.....1873
herbrooke
.....1875
ntreal...1880
Orchester
.....1870
uth, N.S.1877
ontreal..1863
.....1862
. Q.....1878
.....1869
), Mont-
.....1866
l, Que..1877
ford, Q..1880
Nebras-
.....1864
.....1868
.....1852
Q.....1879
.....1874
London
.....1876
.....1867
arlotte-
.....1878
ec.....1875
.....1878
rooke, Q.1866
real.....1874
.....1878
.....1875
eal.....1874
oronto)
.....1871
ontreal.1878
terboro,
.....1871
al.....1878
al.....1872
Montreal186
.....1873
.....1871
.....1880
.....1860
Ont..1872
t.....1874
York-
.....1877
.....1876
nond-
.....1866
s, Q...1878
.....1872
.....1863
.....1866
.....1869
.....1869
ke St.,
.....1879
1) (P),
.....1866
.....1861

hesnay, Henri J. T., Beauce, Q.....1866
y, Henry T., B.A., Sweetsburg, Q. 1878
gas, François O., Montreal.....1880
ncan, Alexander E., B.A., 19 Shuter St. Montreal.....1879
unlop, John, 12 Hospital St. Montreal.1860
Duprat, Pierre N.....1866
Durand, Naphtalie, 67 St. Sulpice St Montreal.....1864
* Ethier, Léandre, 352½ Lagauchetière St. Montreal.....1879
Ethier, Marc, 25 St. Gabriel St. Montreal1877
Faribault, Joseph E., L'Assomption, Q.1878
Farmer, Wm. O., Montreal.....1866
* Fay, John E., Knowlton, Q.....1878
Fisher, Roswell C., Knowlton, P. Q.....1869
Fisk, John J., Coaticooke.....1868
Fleet, Charles J., B.A., 28 St. François Xavier St. Montreal.....1879
Foran, Thomas P., 178 St. James St. Montreal.....1870
Forget, Adélard, 64 St. Gabriel St. Montreal.....1877
Franks, Albert W.....1871
* Gardiner, William F.....1856
Galarneau, Joseph Antoine.....1864
Galbraith, William, Kingston, Ont. ..1875
Garon, Alphonse P.....1877
Gaudet, Oscar, 160 Notre Dame St. Montreal.....1878
Gauthier, Zéphirin, Sorel, Q.....1859
Gélinas, A., Manitoba.....1876
Geoffrion, Christopher A., 24 St. James St. Montreal.....1846
Gibb, James R., Montreal.....1868
Gilman, Francis E., M.A., 199 St. James St Montreal.....1865
Girouard, Désiré, 56 St. François Xavier St. Montreal.....1860
Glass, James M., 67 St. François Xavier St., Montreal.....1876
Gordon, Asa, Aylmer, Q.....1867
Gosselin, Jean, Quebec.....1877
‡ Goodhue, Henry S. W. (West Indies)1877
Goyette, Henri A., Beauharnois, Q. ..1880
Grahame, Dugald, 1134 Dorchester St. Montreal.....1878
‡ Greenshields, James N., 181 St. James St. Montreal.....1876
Grenier, Amédée L. W.....1863
Hackett, Michael F., Stanstead.....1874
Hall, John S., B.A., 34 St. James St. Montreal.....1875
Hall, William A., 34 St. James St. Montreal.....1863
Hammond, Henry R., Chatham.....1880
Harnett, Wm. de Courcy, City Hall, Montreal.....1870
Hart, Lewis A., M.A., 194 St. James St. Montreal.....1869
Hemming, Edward J., Arthabaska.....1855
‡ Hodge, David W. R., B.A., Sherbrooke, Q.....1874
Holton, Edward, 199 St. James St. Montreal.....1865
Houghton, John G. K.....1863
Howard, Rice M., Winnipeg.....1869
Houliston, Alexander, Three Rivers....1865
Hunter, Herbert S., Montreal.....1880
* Huntington, Russ Wood.....1875
‡ Hutchinson, Matthew, Montreal.... 1873
Jenkins, George E., 37 Mackay St. Montreal.....1874
Jodoin, Isaïe.....1858
Johnston, Edwin R., Stanstead, Q.....1866
Jones, Richard A. A., B.A., Montreal..1864
Joseph, Joseph O., 33 St. Gabriel St. Montreal.....1864
Kavanagh, H. J., 117 St. François Xavier St. Montreal.....1878
Keller, Francis J., 178 St. James St. Montreal.....1869
* Kelly, John P.....1862
Kemp, Edson, B.A., 235 St. James St. Montreal.....1859
Kenny, Wm. R., Aylmer, Q.....1865
Kirby, James, M.A., 19 St. James St. Montreal.....1862
Kittson, George R. W., 60 St. James St. Montreal.....1867
Knapp, Frederic A., 17 St. John St. Montreal.....1877
Labadie, M. T. Adolphe, Montreal.....1874
Labadie, Y. A. Odilon, Montreal.....1874
Lacoste, Arthur, Montreal.....1869
Laflamme, R. G., Montreal.....1856
Laflamme, Léopold, 42 St. James St. Montreal.....1869
Lafleur, Eugene, B.A., Montreal.....1880
* Lafrenaye, P. R.....1856
Lambe, William B., 353 Notre Dame St. Montreal.....1850
Lanctot, Husmer, 3 Place d'Armes Hill Montreal.....1878
Lanctot, Médéric, 69 Upper St. Urbain St. Montreal.....1860
Laplante, Jean Baptiste, St. Stanislas...1880
Lareau, Edmund (ad eun), Montreal....1874
Larivière, Joseph.....1874
Larose, Télesphore.....1860
Lassalle, Lucien, 6 St. James St. Montreal1877
Laurier, Wilfred, Arthabaskaville Q....1864
Laviolette, Pierre B., 16 St. Vincent St. Montreal.....1878
* Lay, Warren Amos.....1867
Lawlor, Richard S., Aylmer, Q.....1865
Leach, David S., Montreal.....1861
* Leach, Robert A., M.A.....1860
Lebœuf, Louis C., 57 St. Gabriel St. Montreal.....1873
Leblanc, Albert, 23 St. Denis St. Montreal.....1879
Ledieu, Léon, 1 St. Pierre St., St. Henri, Montreal.....1879
Lefebvre, Frédéric, 6 St. James St. Montreal.....1863
Lebeurveau, Steadman A., 63 St. François Xavier St. Montreal.....1876
Leet, Seth P., 13 Hospital St. Montreal 1879
Levy, J. C. E., 20 St. Louis St. Montreal1878
Lonergan, James, 34 St. James St. Montreal.....1873
Lonergan, Michael L. S., 151 St. James St. Montreal.....1871
Loranger, Louis George.....1863
Lyman, Elisha Stiles.....1865
Lyman, Frederick S., B.A., 12 Hospital St. Montreal.....1869
‡ Lynch, Wm. W., Quebec.....1868
Mackenzie, Fred., 5 Prince of Wales Terrace, Montreal.....1861
Madore, Camille, Notre Dame de Grâce.1880
‡ Major, David, 61 St. Gabriel St. Montreal.....1875
Major, Edward James, 403 Guy St. Montreal.....1871
‡ Marler, Wm. DeM., B.A., 115 St. François Xavier St. Montreal.....1872
Martineau, Paul G., 84 Champlain St. Montreal.....1879

McCord, David Ross, M.A., 82 St. François Xavier St. Montreal.....1867
McCorkill, John C. G. S., 178 St. James St. Montreal.....1877
McCormack, Duncan L., 112 St. François Xavier St. Montreal.....1871
McDonald, Frank H.....1873
McDonald, John S.....1876
McDougall, John W. C., Three Rivers, Q.1877
McFee, Kutusoff N., B.A., Montreal..1880
* McGee, Thos. d'Arcy.....1861
McGibbon. R. D., B.A., 103 St. François Xavier St. Montreal.....1879
McGoun, Archibald, B.A, 1383 St. Catherine St. Montreal.....1878
McIntosh, John, B.A., Molsons Bank Chambers, Montreal.....1868
McKercher, John, Montreal.....1880
* McKinnon, Edmund.....1878
Maclaren, John J., 13 Hospital St. Montreal.....1868
McLaren, John Robert, M.A., 525 Sherbrooke St. Montreal.....1859
* McLaurin, John Rice.....1867
McLean, B. C., 19 St. Monique St. Montreal.....1879
McLennan, William, Montreal.....1880
‡ MacMaster, Donald, 181 St. James St. Montreal.....1871
* McNaughton, Peter J.....1879
Merry, John Wesley, Sherbrooke, Q ..1870
Messier, Damase, 56 St. Gabriel St. Montreal.....1875
Messier, Joseph S., St. John, Q.....1868
‡ Mignault, Pierre B., 36 St. Vincent St. Montreal.....1878
Mitchell, Albert Ed., Sweetsburg, Q...1867
Molson, Alexander, 101 St François Xavier St. Montreal.....1851
Monk, Ed. Cornwallis, 182 St. James St. Montreal.....1870
Monk, Frederick, 89 St. James St. Montreal ..1877
Morrin, Pierre A., Montreal.....1878
Morris Alexander, M.A., Toronto, Ont.1850
Morris, John L., 353 Notre Dame St. Montreal.....1859
Morrison, Adelard, Napierville, Que....1878
* Nagle, Sarsfield B.....1862
‡ Nicholls, Armine D., B.A., 48 Victoria St. Montreal.....1879
Nichols, Thomas, M.D., LL.B., 137 Bleury St. Montreal.....1875
Nutting, Charles A., Montreal.....1872
Ouimet, Adolphe P., 332 Lagauchetière St. Montreal.....1861
Painchaud, Joseph, Montreal.....1880
Palliser, Joseph, 17 St. John St. Montreal 1877
Panet, Edouard A.....1874
Papineau, Joseph G., 32 St. James St. Montreal.....1869
Parisault, Chs. Ambroise.....1859
Pelletier, Louis C., 446 Mignonne St. Montreal.....1877
Perras, F. X., 4 St. James St. Montreal.1878
Perry, Joseph, New Orleans.....1869
* Perkins, John A., M.A.....1860
Perodeault, Narcisse, 5 St. Thérèse St. Montreal.....1876
Piché, Aristide.....1868
Pillet, J. Henri, Court House, Montreal.1879
* Plimsoll, Reginald J., M.A.....1861
Poutré, Félix E., Montreal.....1874
Power, Alexander W. A., Ottawa.....1868
Préfontaine, Raymond, 14 St. James St. Montreal.....1873

* Deceased.

Purcell, John D., 146 St. James St. Montreal.....
Rainville, Henri Benjamin, 43 St. Gabriel St. Montreal.....1858
Ramsay, Robert A., M.A, Merchants' Exchange, 11 St. Sacrament St. Montreal.....
Reddy, Wm. B. S., Montreal.....1857
Ricard, Damase F J.....1879
Richard, Emery Edward, Battleford, N. W. T.....
Richard, Edward E.....1876
Ritchie, Wm. F., B.A., 660 Sherbrooke St. Montreal.....1873
Rixferd, Em Hawkins, San Francisco.1875
Robidoux, J. Emery, 10 St. James St. Montreal.....1880
Robillard, Emile.....1870
Rochon, Charles A., 212 Notre Dame St. Montreal.....1863
Rose, William, London, England.....1862
Ross, Walter Lord, 11 Hospital St. Montreal.....1869
Sabourin, Ernest.....1866
Santoire, Camille, Montreal.....1866
Sarrasin, Ferdinand Léon, 16 St. Vincent St. Montreal.....1880
Scallon, William, Montreal.....1864
Sexton, James Ponsonby, 59 St. François Xavier St. Montreal.....1868
Sharp, W. Prescott, Montreal.....1852
Short, Robert, Richmond, P.Q.....1879
Sicotte, Victor B, Cadastre Office, Montreal.....1874
Snowdon, H. L., 67 St. François Xavier St. Montreal.....1876
Spong, John J. R., Montreal.....1878
St. Jean, Edmund R., Montreal.....1879
Stephens, Charles Henry, Montreal....1875
Stephens, George W., Merchants' Exchange, Montreal.....1863
Stephens, Romeo H., 56 St. François Xavier St. Montreal.....1850
Stephens, Chas. O.....1864
Taché, Pascal, Montreal.....1876
Tait, Melbourne, Montreal.....1862
Taschereau, Arthur, Quebec.....1864
Taylor, A. Dunbar, B.A., Montreal ..1878
Taylor, Reid, Montreal.....1869
Terrill, Joseph Lee, Stanstead, Que....1865
Torrance, Fred W., M.A., Montreal....1856
Trenholme, Edward H., M.D., Montreal 1865
‡Trenholme, Norman W., M.A., Montreal 1865
Trudel, Bouthillier J., 75 Dubord St. Montreal.....1879
Vandal, Philippe, 58 St. François Xavier St. Montreal.....1861
Vilbon, Chas. A., 44 St. James St. Montreal.....1863
Walker, William G, 112 St. François Xavier St. Montreal.....1874
* Walsh, Thomas Joseph.....1860
Watts, William J., B.A., Drummondville, P.Q.....1869
Weir, Robert S., Montreal.....1880
* Welch, Alfred.....1864
Wicksteed, Richard G., M.A., Ottawa..1868
Wight, James H.....1868
Wood, Franc Ogilvie, 146 St. James St. Montreal.....1870
Wotherspoon, Ivan T. (Laval) [ad eun] 11 Hospital St. Montreal.....1869
Wright, William Mackay, B.A., Hull..1863
Wurtele, Charles J. C., Sorel, P.Q.....1863
Wurtele, Jonathan S. C., Montreal....1870

‡ Elizabeth Torrance Medallists.

BACHELORS OF ARTS.

ian, James G., (†E), Lockport, N. S..1873
ilan, John, (N) Leeds, Q.....1374
llen, Frank A., Huntingdon, Q.....1880
illworth, John.....1872
Amaron, Calvin E.,(P 2), Three Rivers, Q.....1877
Anderson, Jacob de Witt, (†C) 1866
Anderson, James A., Montreal 1877
Archibald, John Sprott. (†P) Montreal.1867
Atwater, Albert W., Montreal..... 1877
Aylen, Peter, B.C.L., Aylmer, Ont 1850
Bancroft, Rev. Chas., junior, M.A., Knowlton, Q.....1866
Barnston, Alexander, (†).....1857
Bayne, George D., Montreal.....1880
Baynes, Donald, Canterbury, Eng 1864
Beckett, William Henry.....1866
Bennet, James, Montreal.....1880
Bethune, Meredith Blenkarne, (†N), Montreal 1866
Black, James R.....1874
Blackader, Alex. D., (N),Montreal....1870
Blakely, Malcolm D., Montreal.....1878
Bland, Salem G., (Morrin), Montreal...1877
Bockus, Charles E 1852
* Bothwell, John A., (†N).....1864
Boyd, John, (N 2) 1861
Brewster, William, (†C).....1865
Brooks, Charles H , (†N) Smyrna... ..1868
Browne, Arthur Adderley, (†E), Montreal.....1866
Brown, Thomas.....1853
Bull, Harcourt J., (†P), Montreal.....1880
Bullock, William E , (†C), Millbrook,O1860
Cameron, James. M.A., (†M). 1871
Carmichael, James, Markham, Ont....1867
Cassels, Hamilton, (Morrin), Millichamp's Building, Adelaide St., Toronto.....1873
Cassels, Robert, (Morrin) (P) Ottawa...1866
Chandler, George H., (†M), 32 Lorne Avenue, Montreal 1875
Chipman, Clarence, Prescott, O ..... .1866
Chubb, Sydney C., (N 2), Brooklyn, N.Y.....1877
Christie, John H., Lachute 1872
Clark, Wallace, (†E) 1869
* Cline, John D , (†C) 1871
Clowe, John D. 1863
Cook, Archibald H., (Morrin) Quebec .1869
Cornish, Rev. Geo., B.A., *London Univ.* (ad eun) Montreal 1856
Cox, Jacob W., Noel, Hants Co., N.S..1876
Craig, James A., (P 2) Fitzroy, O.....1880
Craig, James, Renfrew, O.....1874
Cross, Alexander S., (†P), Montreal,..1879
Crothers, W. J., (P 2), Phillipsburg, Q 1872
Crothers, Robt. A., (†C), Bedford, Q .1876
Coussirat, Rev. Adrian D., (ad eun).....1871
Cunningham, Thomas E., (P 2), Montreal.....1880
Currie, Dougald, (E), Crinan, O.....1880
Cushing, Lemuel, (C), Montreal.....1863
Darey, J. Herbert, (†C), Montreal.... 1880
Dart, William J., Laprairie.....1868
Davidson, Charles Peers, Montreal.....1863
Davidson, Rev. Jas., (ad eun), Montreal.1863
Davidson, Leonidas Heber, Montreal..1863
Dawson, William B., (†N), Montreal..1874
Dawson, Rankine, (P 2). Montreal 1878
Dewey, Finlay McN. (P 2), Richmond,Q1874
Dey, William J., (N), Spencerville,Ont 1871
DeWitt, Caleb S., Lockport, Ill, U.S....1861
Donald, James T., (†N), Montreal.....1878
Dougall, Duncan, Windsor, Ont.....1860
Dougall, John Redpath, Montreal.....1860
Drummond, Chas. G. B., (N), Montreal.1862
Duff, Archibald, (†M), Airedale College, Yorkshire, Eng..... 1864
Duffy, Henry T., (E 2),Bedford.....1876
Duncan, Alexander, Montreal.....1867
Eadie, Robert, (†C), Oakland, O.....1879
Ells, Robert, (†N), Montreal..... 1872
Empson, John, 71 University St., Montreal.....1874
Ewing, William, Winnipeg, Manitoba..1878
Fairbairn, Thomas, (P 2).....1863
Ferguson, James D., (Morrin), Quebec..1880
Ferguson, John S., Montreal.....1861
* Ferrier, Robert W.....1857
Fessenden, Elisha Joseph, Chippawa, O.1863
Fleet, Charles J., (E), Montreal.....1873
Forneret, Geo. A., Dunham Flats.....1877
Fortin, Rev. Octave,(ad eun), Winnipeg, Man.....1867
Fowler, William, (N).....1865
Fowler, Elbert.....1868
Fraser, John, (Morrin).....1869
Gibb, Charles, 80 Aylmer St., Montreal.,1865
Gilman, Francis Edward, Montreal.l....1862
Gore, Frederick 1861
Gould, Charles H., (†C), Montreal.....1877
Gould, Edwin, Montreal 1856
Graham, John, (†E), Williamstown, O.1876
Graham John H., Ormstown, Que.....1878
Grandy, John, Millbrook, Ont 1866
Gray, William, Union Theological Sem., New York 1876
Greenshields, Edward, (†P), 305 Peel St., Montreal 1869
Greenshields, Samuel, 90 Union Av., Montreal 1874
Green, Joseph, (†C), 600 West 5th St., Cincinnati, Ohio, U.S.....1861
Green, Lonsdale, 118 Leadenhall St., London, E. C., Eng.....1864
Guérin, Edmund W. P., (†E), 692 Craig St., Montreal 1878
Hall, John S.....1874
Hall, Rev. William, 30 Fort St., Montreal.....1861
Hart, Lewis A., Montreal.....1866
Harrington, Bernard J., (†N), Montreal 1869
Harvey, Alfred, St. Johns, Newfoundld 1874
Harvey, Charles J., St. John's, Newfoundland 1874
Hemming, Henry, (Morrin) Quebec.....1880
Hicks, Frank W., Montreal.....1864
Hindley, John, Montreal.....1868
Hodge, D. W. R., (†E), Sherbrooke, Q.1872
Holiday, Caleb S., Lachute, Q.....1870
Howard, Robt. J. B., (†N) , Montreal....1879
Jones, Montgomery, (E), Hatley, Q....1869
Johnston, Rev. Jas. A., (†P), Rutland, Vermont.....1870
Joseph, Montefiore, (N), Quebec 1870
Kahler, Frederick A., (†C), Germantown, Phil., U.S 1869
Keays, Charles H., Hamilton, Ont.....1880
Kelley, Frederick W., (†E), Montreal ..1871
Kemp, Edson, Montreal.....1859
Kennedy, George T., (N), Wolfville, N.S.1868
* Kershaw, Philip G..... 1867
Kirby, James, (†), Montreal.....185
Klock, Robert A., Aylmer, P.Q.....188
Krans, Edward H., (†E), N. York.....186
Lafleur, Eugène, (†P), Montreal.....187

Lafleur, Paul T., (†E), Montreal 1880
Laing, Robert, (†P), Halifax,N.S.....1868
Lane, Campbell,293 Peel St., Montreal..1879
Larivière Vitalien, Roxton Falls, Q.....1880
* Leach, Robert A.....1857
Lewis, Albert R., (E) 1869
Lighthall, William D., (†F), Montreal .1879
Lyman, Clarence A., Montreal.....1878
Lyman, Henry H., (†N), Montreal.....1876
Lyman, Frederick Stiles, Montreal.....1868
Major, George W., 1398 St. Catherine St., Montreal.....1870
Marler, Wm. de M., (†M), Montreal.....1868
Mason, James L.....1859
Matheson, John, Presbyterian College, Montreal 1876
Mattice, Corydon J., Cornwall, O 1859
Maxwell, John, (N), L'Orignal, O.....1872
McClure, Wm., (†M), Oshawa, O.....1879
McConnell, Richard G., (N) Montreal..1879
McCord, David Ross, Montreal.....1863
MacDonnell, Richard L.,(†C), Montreal 1873
MacDuff, Alexander Ramsay 1866
McFadyen, Allan L., Montreal.....1878
McFee, Kutusoff N., (†P), 30 St, Famille St., Montreal 1874
McGibbon, Robert D., Montreal.....1877
McGoun, Archibald, (†P), Montreal....1876
McGregor, Archibald F., Listowell, Ont.1877
McGregor, James, (C), Montreal.....1864
McGregor, Duncan, Guelph, Ont.....1871
* McIntosh, John, (†E) 1870
McKenzie, John, (Morrin).....1867
McKenzie, Robert, (P).....1869
McKibbin, William M., Edwardsburg,O.1875
McKibbin, Robert, Edwardsburg, Ont .1879
McKillop, Ronald, Inverness, Q.....1878
McLaren, David C., Montreal 1878
McLaren, John R., 525 Sherbrooke St., Montreal.....1856
McLaren, Harry, (†) 67 Mansfield St., Montreal.....1858
McLean, Neil W., (Morrin) (P 2).....1866
McLean, Bredalbane S., Montreal.....1869
McLennan, Duncan, H., Alexandria, Ont.....1871
McLennan, John S., (P), 317 Drummond St., Montreal.....1874
McLeod, Duncan C., (†M), Charlotte-town, P.E.I.....1873
* McLeod, Hugh.....1866
McLeod, Finlay J., Winnipeg, Man....1872
* McOuat, Walter, (N).....1865
Mercer, Walter D., Montreal 1880
Merritt, David, Prescott.....1863
Molson, Charles A., (†N), Montreal 1880
Moore, Francis X.....1868
Morris, William, Montreal.....1859
Morris, Alexander, Toronto, O.....1849
Morrison, John 1866
Morrison, James D., (†N), Ogdensburg, N.Y.....1865
Morrison, David W., (E),Ormstown, Q.1870
Muir, Andrew C., N. Georgetown, Q....1880
Muir, John F 1864
* Muir, Rev. E. P., (ad eun) 1865
Munro, Gustavus, Embro, Ont.....1871
Munro, Murdoch, Williamstown, L'Ori-gnal 1872
Murray, Charles H., (†N) 1873
Naylor, W. H., (†P), Clarendon, Q 1872
Newnham, Jarvois A., Levis,Q.....1878
Ogilvie, Archibald, N. Georgetown,Q...1880
Oliver, Theophilus H., (Morrin) (P2) ..1866
Pease, George H., (†C), 120 Broadway, New York.....1864
Pedley, Hugh, Cobourg, O.....1876
Pedley, Charles S., (P), Port Perry, Ont1878
Perrigo, James, (N) Montreal.....1866
* Perkins, John A.....1858
Petit, Rev. Charles B.....1850
Phillips, Charles W.....1852
Pillsbury, Carrol E , Augusta,Me., U.S..1880
* Plimsoll, Reginald J.....1858
Ramsay, R. Anstruther, B.C.L. (†N), Montreal.....1862
Raynes, Charles, Montreal.....1880
* Redpath, George D.....1857
Redpath, William W.. Montreal.....1879
Reddy, Herbert L., (E), Montreal.....1873
Rexford, Elson J., (P), Montreal 1876
Ritchie, Arthur F., (C) 6 West 3rd St., St. Paul, Minn.....1873
Ritchie, Wm. F., (†C), 660 Sherbrooke St., Montreal.....1875
* Roberts, George F , (P 2) Montreal...1880
Robertson, Alex., (†N), 1100 Dorchester St., Montreal 1870
Robertson, Robert, (P), Yarmouth,N.S.1877
Robins, Sampson Paul, (†M),Montreal..1863
Ross, George, (†C) Montreal.....1862
Ross, James, (†P), Huntingdon, Q.....1878
Russell, Henry, (Morrin) 1869
Scott, Henry C., (Morrin) (P), Mont-treal 1866
Scott, Matthew H., (†N), Bristol, Que..1877
Scriver, Charles W., Hemmingford, Q..1880
Sherrill, Alvan F., (†N), Omaha, Nebras-ka, U.S.....1864
Slack, George, Montreal 1868
Stethem, George T.....1852
Stevens, William H., St. Johns, Q.....1879
Stevenson, Samuel C., Montreal.....1874
Stevenson, Rev. J. F., B.A., *London Univ.*, (ad eun), Montreal 1876
* Stewart, Colin Campbell, (†N).....1867
Stewart, William S., (†C), Charlotte-town, P.E.I.....1878
Stuart, Gustavus G., (†P), Quebec.....1875
Sweeney, James F., Franklin, Q.....1878
Tabb, Silas Everett, (N), Sherbrooke,Q.1866
Taylor, Archibald D., (C), Montreal.....1874
Taylor, Edward T., Kingston, O.....1878
Taylor, Ernest M., Stanstead, Q 1875
Thomas, Henry W., (†E), Montreal.....1874
Thornton, Rev. R., McA., (Toronto) (ad eun) Glasgow, Scotland.....1871
Thornton, Hastwell W., (N), Montreal.1878
Torrance, Edward F., (P 2), Peterboro, Ont.....1871
Torrance, Frederick W., Montreal.....1878
Torrance, John Fraser, Montreal.....1872
Trenholme, Norman Wm., (†P),Montreal186
Tunstall, Simon J., (E), Montreal 1873
Tupper, James S., (N), Toronto.....1871
Walker, John, (Morrin) Quebec.....1880
Walker, Thomas.....1860
Wallace, Robt. W., (P), London, Ont..1872
Ward, George B., (†C), Orillia, Ont.....1874
Warriner, Rev.William H., (†E), York-ville, Ont.....1877
Watson, Alindus J., London, Ont.....1876
Watts, Wm. John, (C), Drummond-ville, Q.....1866
Wellwood, James, Côte des Neiges, Q..1878
Whillans, Robert, Ottawa.....1872
Wicksteed, Richard J., (C), Ottawa.....1863
Wilson, John, (E).....1866
Wood, Franc O., Montreal.....1869
Wood, Thomas F., Montreal.....1869
Wood, Holton H., 764 Sherbrooke St., Montreal.....1879
Wotherspoon, Ivan T., (Morrin) (P), Montreal.....1866
Wright, Wm. McKay, Ottawa.....1861

BACHELORS OF APPLIED SCIENCE.

In Civil and Mechanical Engineering.

Boswell, St. George J., Assistant Engineer Harbour Improvements, Quebec...1874
Boulden, Charles M., Millersburg, Ky., U.S.....1878
Brodie, Robert J., Montreal.....1873
Batcheller, Aivan A., Bedford, Q.....1875
Chipman, Willis (N), Brockville, Ont...1876
Dawson, William B., B.A., Montreal....1875
Dudderidge, James, Lachute, Q.....1880
* Frothingham, John J.....1875
Harvey, Charles J., B.A., St. John's, Newfoundland.....1874
Hawley, David F., Aird, Q.....1876
Hethrington, Frederick, Quebec.....1876
Hall, Richard, Chelsea Road, nr. Ottawa1878
Hill, Arthur E., Sydney, C.B.....1875
Jones, Thomas H., Bradford, Ont.....1877
Kennedy, George T., M.A., Acadia College, Wolfville, N.S.....1873
McLean, Alexander J., Canada Pacific Railway.....1874
McLeod, Clement H., Montreal.....1873
O'Dwyer, John S., Montreal (L).....1880
Page, John, Lachine Canal Works, Office of Engineer, Montreal.....1875
Robertson, George S., do do do.1874
Rogers, Richard B., Auburn, Ont.....1877
Ross, George, Toronto, Ont.....1875
Ross, Philip D., Montreal.....1878
Skaife, Wilfred T., Montreal.....1880
Sproule, William J., Montreal Harbour Works.....1877
Stewart, Donald A., Fort William, L.S.1878
Swan, John, Windsor St., Montreal....1878
Thompson, William T., (N), Cannington, Ont.....1877
Walbank, William McL., Union Av., Montreal.....1877
Wardrop, Norval, Brockville, Ont.....1877
Wicksteed, Henry K., Ottawa.....1873
Wilson, Robert A., Winnipeg, Man.....1875

In Mining and Assaying.

Robertson, William F., (N 2), Montreal.1880
Rogers, Richard B.....1878
Spencer, Joseph Wm., (N), Windsor, N.S.....1874
Torrance, John Fraser, B.A., (N), Tangier, N.S.....1873
Wicksteed, Henry K.,.....1874
Wilkins, Dan. F. H., B.A., (Tor) (N), Chatham, Ont.....1875

In Practical Chemistry.

Adams, Frank, (N), Geological Survey, Montreal.....1878

GRADUATES IN CIVIL ENGINEERING.

Barnston, Alexander, B.A., M.D.....1859
Bell, Robert, (N), Geological Survey....1861
Crawford, Robert.....1859
Doupe, Joseph, Winnipeg, Man.....1861
Edwards, George.....1863
Frost, Geo. H., Tribune Building, N.Y..1860
Gaviller, Maurice.....1858
* Gooding, Oliver.....1858
Gould, James H.....1862
Kirby, Charles H., 58 Crescent St., Montreal.....1860
McLennan, Christopher.....1859
Reid, John Lestock, Prince Albert, Man.1863
Rixford, Gulian Pickering.....1864
Ross, Arthur.....1860
* Savage, Joseph.....1860
Walker, Thomas, B.A.....1860

[C] First Rank Honours in Classics : [C2] Second Rank do.
[E] do do do in English Literature, &c. [E2] do do
[M] do do do in Mathematics and Physics. [M2] do do
[N] do do do in Natural Science. [N2] do do
[P] do do do in Mental and Moral Philosophy. [P2] do do
[L] Lorne Medal for highest Standing in Examinations for Bachelor of Applied Science.

* Deceased.

† indicates the *Gold Medallist* for the subject denoted by the letter to which it is prefixed; or, if standing alone, for best general standing. For the titles of the Gold Medals assigned to the several subjects since 1864, see § VI. of Faculty of Arts.

In 1857, 1858, 1859, the *Chapman* Medal was awarded for the best general standing; 1860, 1861, 1862, for Classics; 1863 for Mental and Moral Philosophy; 1864 for Natural Science.

In 1862 the *Prince of Wales Medal* was awarded for Natural Science; 1863 for Mathematics. and Physics; 1864 for Classics.

NOTE:—The Registrar of the University will be grateful for any corrrections or additions to the addresses given in the above lists; and also for communication of titles which graduates may have acquired since their graduation.

Students of the University.

SESSION 1879–80.

McGILL COLLEGE.

FACULTY OF LAW.

First Year.

Barnard, Archibald E., Montreal, Q.
Brooke, George A., Richmond, Q.
Crankshaw, James, Montreal, Q.
Cross, William H., Montreal, Q.
Dagenais, Joseph A., Ste. Rose, Q.
Duhig, John T., Quebec, Q.
Girard, Alfred C., Marieville, Q.
Guertin, Alfred L., Montreal, Q.
Goldstein, Maxwell, Montreal, Q.
Hipple, Ezra F., Campden, O.
Joliffe, William J., Montreal, Q.
Klock, Robert A., Montreal, Q.
Lefebvre, Toussaint Z., Montreal, Q.
Lighthall, George R., Montreal, Q.
McDonald, Hector C., Belfast, P.E.I.
Morgan, Edward A. D., Montreal, Q.
Pillsbury, Carrol E., Augusta, Me.
Renaud, Pierre U., Montreal, Q.
Scriver, Charles W., Montreal, Q.
Weeks, William A., Belfast, P.E.I.
Weir, Frank, Montreal, Q.
White, William J., Montreal, Q.
Wright, George C., Montreal, Q.

Second Year.

Aylmer, Hon. Henry, Melbourne, Q.
Chagnon, Joseph E., Montreal, Q.
Cross, Alexander, Ormstown, Q.
DeMartigny, A. L., Montreal, Q.
Downie, Donald, Hinchinbrooke, Q.
Forster, Rev. Joseph L, Newcastle-on-Tyne, E.
Foster, George G., Knowlton, Q.
Gauthier, Antoine A., Sault-au-Recollet, Q.
Ingalls, Allen G., Granby, Q.
Klock, Robt. Alex., Aylmer, Q.
Lane, Campbell, Montreal, Q.
Lyman, Albert C., Montreal, Q.
McMahon, Edmond M., Montreal, Q.
Oughtred, Allen R., Sheridan, O.
Raynes, Charles, Montreal, Q.
Redpath, William W., B.A., Montreal, Q.
Rutherford, Alexander C., Woodstock, O.
Shortis, James, Three Rivers, Q.
Smith, Robert C., Montreal, Q.
Trudel, Louis P., Montreal, Q.
Weir, William A., Montreal, Q.

Third Year.

Alguire, John C., Cornwall, O.
Atwater, Albert W., B.A., Montreal, Q.
Austin, Joseph E., Montreal, Q.
Berthelot, Joseph B., Montreal, Q.
Biron, Jean B. S., Montreal, Q.
Brakenridge, J. Wm., Perth, Scotland.
Chartrand, Alfred J., Montreal, Q.
Cooke, J. P., Drummondville, Q.
Creighton, James G. A., Halifax, N.S.
DeBeaumont, Alfred L., Montreal, Q.
DeMartigny, Charles L., Montreal, Q.
Doré, Pierre J, Laprairie, Q.
Dugas, François O., Montreal, Q.
Goyette, Gonzalve H.D., Beauharnois, Q.
Hammond, Henry R., Chatham, Q.
Hunter, Herbert S., Montreal, Q.
Laplante, Jean B., St. Stanislas, Q.
Lafleur, Eugene, B.A., Montreal, Q.
Madore, Camille, N. Dame de Graces, Q.
McLennan, William, Montreal, Q.
McKercher, John, Montreal, Q.
McFee, Kutusoff M., B.A., Montreal, Q.
Reddy, William B. S., Montreal, Q.
Sharp, William P., London, E.
Weir, Robert, Montreal, Q.

†Ayer, Nehemiah, M.A., Woodstock, N.B.
Allen, Clarence E., East Farnham, Q.
Ambrose, Thomas, Montreal, Q.
Bangs, Edson Clark, Faribault, Minn.
Beer, Charles N., Charlottetown, P.E.I.
Bell, D.M., New Edinburgh, O.
Bennet, James, B.A., Montreal, Q.
Bowser, James C., Kingston, N.B.
Brown, Charles O , Lawrenceville, Q.
Brown, Thomas L., Ottawa, O.
Burland Benjamin W., Stottsville, Q.
†Cahalan, James, Wyandotte, Mich.
Cameron, Charles E., Montreal, Q.
Cameron, Paul, Williamstown, O.
Cameron, John W., Montreal, Q.
Campbell, Lorne, Montreal, Q.
Cantlie, George, Montreal, Q.
Carson, John H., Port Hope, O.
Cattenach, Angus M., Dalhousie Mills, O.
Case, Thos. E., Exeter, O.
Christie, Edmund, Lachute, Q
†Church, Frederick W. H., Aylmer, Q.
Clarke, Sinclair H. J., Winnipeg, Man.
Comstock, Harlow M., Lawrence, Mass.
Cook, S E., Aultsville, O.
Cormack, Wm., Guelph, O.
†Cowley, Daniel K., Ottawa, O.
Cuthbert, Albert R., Berthier, Q.
Dawson, Rankine, B.A., Montreal, Q.
Dearden, George A., Richmond, Q.
Denyer, William W., Toronto, O.
Derby, William J., North Plantagenet, O.
Dickson, James A., Trenholmeville, Q.
†Dibblee, Geo. O., Moore's Mills, N.B.
Drummond, William A., Montreal, Q.
Duncan W. T., Granby, Q.
*Duncan, James H., Goderich, O.
Dunlop, Alex. H., Pembroke, O.
Edick, George H., Dundas, O.
†Edwards, James S., London, O.
Eliot, Andrew, Almonte, O.
Fairbanks, Chas. S., Oshawa, O.
Feader, Henry C., Iroquois, O.
Ferguson, William A., Richibucto, N.B.
Fielde, Edmund C., Prescott, O.
Fillmore, Edwin A., Strathroy, O.
Forde, S. M., Almonte, O.
Fraser, Henry D., Pembroke, O.
Gale, Hugh, Elora, O.
Gardner, John J., Beauharnois, Q.
Gordon, Chas. M., Ottawa, O.
Grant, James A., B.A., Ottawa, O.
Grange, T. W., Napanee, O.
Gray, James, Brucefield, O.
Grey, William L., Pembroke, O.
Griffith, Thomas H., Barbadoes, W. E. I.
Haldimand, A. W., Montreal, Q.
Hanvey, Chas. B. H., Cleveland, Ohio.
Harrisson, J. H., Moulinette, O.
Harvie, John B, Ottawa, O.
†Heard, Charles D., M.A., Charlottetown, P.E.I.
Higginson, Henry A., L'Orignal, O.
†Henderson, Andrew, Montreal, Q.
Houston D. W., Belleville, O.
Hurdman, B. F. W., Aylmer, Q.
Heyd, Herman E., Brantford, O.
Hopkins Joseph A., Cookshire, Q.
Howard, Robt. J. B., B.A., Montreal, Q.
Hunt, John J., Lambeth, O.
Hutchins, Horace A., East Farnham, Q.
†Inksetter, David G., Copetown, O.
Jack, W. D. B., B.A, Fredericton, N.B.
Johnson, J. A., Almonte, O.
Johnson, C. H., Almonte, O.
Josephs, George E., Pembroke, O.
Kelly, Patrick N., Rochester, Minn.
Klock, Robert H., Eardley, Q.
Lang, William A., St. Marys, O.
Lathern, John S., Yarmouth, N. S.
Laurin, E. Joseph, Montreal, Q.
†Logan, Robert, Iona, Mich.
Loring, J. B., Sherbrooke, Q.
Lunam, Henry, B.A., Litchfield, Q.
†Maas, Rudolph J., Negaunee, Mich.
Martel, Ovide, Montreal, Q.
Maher, James J., Albany, N. Y
Meahan, John C., Bathurst, N.B.
Macdonald, Alex., Paisley, O.
Macdonald, Malcolm C., Glencoe, O.
†Macdonald, Robert C., Perth, O.
Macdonald, Robt. T. E., Montreal, Q.
McCaffrey, Francis F., New York, U. S.
McCorkill, Robert K. C. G., Montreal, Q.
†McDonald, John A., Panmure, P. E. I.
†McEachran, William, Montreal, Q.
McEvenue, John E., Montreal, Q.
McGannon, Edward A., Prescott, O.
McKay, James, Ottawa, O.
McKenzie, Kenneth A. J., Melbourne, Q.
†McKenzie, Bartholomew, E., B.A., Aurora, O.
McLean, Thomas N., Perth, O.
†McLaren, David C., B.A., Montreal, Q.
McLeod, Archibald, Orwell, P. E. I.
†McNulty, Michael, Iroquois, O.
McRae, John C., Port Colborne, O.
Mewburn, Frank H., Drummondville, O.
†Mignault, Louis D., B.A., Montreal, Q.
Morgan, William G., Sorel, Q.
Morris, William, B.A., Brockville, O.
Moore, William, Owen Sound, O.
Muckey, Floyd S., Medford, Minn.
Musgrove, Wm. J., West Winchester, O.
O'Brien, T. J. P., Worcester, Mass.
†O'Callaghan, Thomas A., B.A., Worcester, Mass.

O'Keefe, Henry, Lindsay, O.
Ogden, Henry V., B.A., St. Catharines, O.
Page, Thomas A., Brockville, O.
Park, James, Newcastle, N.B.
Perks, Wm. C., Port Hope, O.
†Pinsoneault, Bernard, Montreal, Q.
Poaps, Allen P., Osnabruck Centre, O.
†Poole, Henry E., Wakefield, Q.
Prendergast, Walter J., B.A., Côte des Neiges, Q.
Prime, Merrill F., Brome, Q.
†Pringle, Alex. F., Cornwall, O.
†Pulford, Frederick W., Winnipeg, Man.
Reynolds, Thomas W., Brockville, O.
Rogers, E. J., Peterboro, O.
†Riordan, Bruce L., Port Hope, O.
Robinson W. G., Lyn, Mass.
†Ross, George T., Montreal, Q.
Ross, Lewis D., Montreal, Q.
Ross, John W., Winthrop, O.
Ross, James, B.A., Dewittville, Q.
Rutherford, Clarendon, M.A., Waddington, N. Y.
Rutledge, And. J., Bayfield, O.
Rowell, George B., Abbotsford, Q.
†Ruttan, Allan M., Napanee, O.
Scott, Walter M., Winnipeg, Man.
Serviss, Thos. W., Iroquois, O.
Shanks, James C., Huntingdon, Q.
Shaw, Alex., Seaforth, O.
Shaver, William H., Wales, O.
Shaver, Robert, Williamstown, O.
Sheriff, George R., Huntingdon, Q.
Shrady, George, New York, N. Y.
Sihler, George A., Simcoe, O.
Shufelt, William A., Brome, Q.
†Small, Henry B., Ottawa, O.
†Smiley, Jonathan, St. Lamberts, Q.
Smith, W. A., Lachine, O.
Smith, Edward H., Montreal, Q.
Stephen, William, Montreal, Q.
†Stewart, James O., St. Anicet, Q.
Stewart, Andrew, Howick, Q.
†Stevenson, Hans, Wakefield, Q.
Struthers, Alex. D., Philipsburg, Q.
Taylor, Arthur J., Montreal, Q.
Teller, Robert B., Simcoe, O.
Thornton, H. W., B.A., Montreal, Q.
Thompson, William E., Harbor Grace, Nfld.
Trueman, James E., Sackville, N. B.
Tupper, Freeman, Milton, N. S.
Vanier, Philias F., St. Martin, Q.
Wagner, George C., Dickinson's Landing, O.
Williams, Joseph, London, O.
Wood, Ed. S., Faribault, Minn.

† M. D., C. M., 1880.

* Summer Session only.

FACULTY OF ARTS.

Undergraduates in Arts.

First Year.

Barlow, Alfred E., Montreal, Q.
Bland, Charles E., Montreal, Q.
Bowers, Alfred A., Kincardine, O.
Brown, J. Williston, Charlottetown, P.E.I.
Cameron, John D., Dewittville, Q.
Chipman, Lewis, Yarmouth, N. S.
Doane, Morris A., Yarmouth, N. S.
Elliott, J. Raleigh, Ulverton, Q.
England, Luther M., Knowlton, Q.
Fraser, William, Dundee, Q.
Fraser, Donald J., Montreal, Q.
Gardner, Alexander, St. Louis de Gonzague, Q.
Greenshields, Robert A., Danville, Q.
Griffith, Thos. H., Montreal, Q.
Hunter Walter, Hamilton, O.
Kinloch, John Alex., Montreal, Q.
Lee, Archibald, Pendleton, O.
Marceau, James H., Napierville, Q.
Morris, Charles B., Montreal, Q.
O'Halloran, George F., Cowansville, Q.
Orr, Alfred E., Cookshire, Q.
Porter, James A., Kemptville, O.
Reid, John T., North Mountain, O.
Richardson, Alex. W., Montreal, Q.
Ross, Lewis F., Montreal, Q.
Shearer, Wm. K., Athelstan, Q.
Tait, Thomas J., Montreal, Q.
Wheeler, Claude L., Montreal, Q.
Young, Kenneth D., Montreal, Q.

Second Year.

Barron, Thomas J., Lachute, Q.
Cockfield, Henry, Montreal, Q.
Fry, Henry, Quebec, Q.
Guertin, Alfred, Acton, Q.
Hague, Henry J., Montreal, Q.
Lafleur, Henri A., Montreal, Q.
Mackay, Daniel, Pictou, N. S.
Macrae, Lawrence O., Montreal, Q.
McKillop, Peter C., Inverness, Q.
Martin, Alfred W., Montreal, Q.

Morin, Jos. L., Three Rivers, Mass. U. S.
Parent, Manasseh B., St. Pie, Q.
Rielle, Norman T., Montreal Q.
Rogers, John H., Huntingdon, Q.
Ross, Peter R., West Torre, O.
Smith, Arthur W., Lachine, Q.
Stewart, Robert, Lachute, Q
Stirling, Robert, Montreal, Q.
Thomas, Francis W. G., Montreal, Q.
Trenholme, Chas. W., Montreal, Q.
Walker, George F., Waddington, N.Y., U. S.
Westlake, Henry W., Exeter, O.
Whillans, George, Ottawa, O.

THIRD YEAR.

Ami, Henry Mark, Ottawa, O.
Black, Charles, Granby, Q.
Bracq, John C., Grand Ligne, Q.
Elder John, Huntingdon, Q.
Falconer, Alexander, Montreal, Q.
Ferguson, William A., Richibucto, N.B.
Gamble, Robert, Billings's Bridge, O.
Gregor, Leigh R., Charlottetown, P.E.I.
Lawford, Charles A., Montreal, Q.
LePage, Thos. A., Charlottetown, P. E.I.
Lyman, Walter E., Montreal, Q.
McDonald, Hector C., Flat River, P.E.I.
McKenzie, Wm. Alex., Lanark, O.
MacLeod, Archibald, Orwell, P. E. I.
McNabb, Robert, Woodville, O.
Macpherson, Kenneth R., Montreal, Q.
Reid, James, North Mountain, O.
Robertson, George, Garafraxa, O.
Rutherford, Alexander C., Ormond, O.
Tucker, John W., Sorel, Q.
Weeks, Wm. A., Charlottetown, P. E. I.
Weir, Frank, Montreal, Q.
White, William John, Montreal, Q.

FOURTH YEAR.

Allen, Frank A., Huntingdon, Q.
Bayne, George D., Montreal, Q.
Bennet, James, Montreal, Q.
Bull, Harcourt J., Montreal, Q.
Craig, James A., Fitzroy Harbour, O.
Cunningham, Thomas E., Montreal, Q.
Currie, Dougald, Crinan, O.
Darey, J. Herbert, Montreal, Q.
Keays, Charles H., Hamilton, O.
Klock, Robert A., Aylmer, Q.
Lafleur, Paul T., Montreal, Q.
Larivière, Vitalien, Roxton Falls, Q.
McIntyre, Hector A., Manilla, O.
Mercer, Walter D., Montreal, Q.
Molson, Charles A., Montreal, Q.
Muir, A. C., North Georgetown, Q.
Ogilvie, Arch., North Georgetown, Q.
Pillsbury, Carroll E., Augusta, Me., U.S.
Raynes, Charles, Montreal, Q.
Roberts, George F., Montreal, Q.
Scriver, Charles W., Hemmingford, Q.

Partial and Occasional.

Allard, Joseph, St. Anne, Kankakee, U.S.
Ami, Samuel T., Ottawa, O.
Bates, Martin J.
Blouin, Alfred, Montreal, Q.
Bolton, Charles E., Bolton, O.
Bouchard, Theodore A., Montreal, Q.
Bruneau, Ishmael, St. Constant, Q.
Cameron, Daniel G., Metcalfe, O.
Carrière, Samuel, Belle Rivière, Q.
*Chaffee, Azro B., Montreal, Q.
Conron, Matthew B., Chesley, O.
*Desmond, Denis D., Constable, Franklin Co., N. Y.
Dow, James, Montreal, Q.
Duclos, John.
Edge, Joseph, Traverston, O.
Fear, Ezra Adam, Brussels, O.
Gibson, John, Vankleek Hill, O.
Grant, John P., Metcalfe, O.
Hague, Fred. H., Montreal, Q.
Haldimand, Albert.
Henderson, George W., Sparta, O.
*Hitchcock, Gilbert, Massawippi, Q.
*Internoscia, Antonio, Montreal, Q.
Knechtel, Valentine, Brussels, O.
*Lamb, Francis, P. S., Montreal, Q.
McClure, William, B.A., Lachute, Q.
McFarland, James, Ottawa, O.
McKinnon, John, Manilla, O.
*McLennan, Neil, Montreal, Q.
Mallory, Delmer E., Mallorytown, O.
Marceau, William F., Napierville, Q.
Moir, David A., London, O.
*Morrison, John A., Rona, P.E.I.
*Murray, William L. F., Isle Dorval, Q.
Perrin, John.
Rondeau, Samuel.
Saer, John B., St. Clears.
Shortis, James, Three Rivers, Q.
Skinner, George, Melbourne, Q.
Smith, Alfred E., Carlingford, O.
Stewart, James B., Innisville, O.
Teichman, J. M.
Tessier, Napoléon, Montreal, Q.
Townsend, John A., Billings's Bridge, O.
Turk, George R., Tilsonburg, O.
Wright, George C., Hull, O.
Young, William R., Kingston, O.

* Partial Students.

FACULTY OF APPLIED SCIENCE.

First Year.

McMillan, David E., Montreal, Q.
McTaggart, Duncan D., Montreal, Q.
Smith, Richard F., Montreal, Q.
Stewart, David M., Carlton Place, Ont

Second Year.

Burland, Jeffrey H., Montreal, Q.
Foster, Philip L., Kingston, O.
Green, Thomas D., Brantford, O.
Houlahan, Alex., Morrisburg, O.
Low, Albert P., Montreal, Q.
Miller Frederick, Napanee, O.
Rabb, John, Lombardy, O.
Skaife, Lewis J., Montreal, Q.
Stephens, G. C., Montreal, Q.

Third Year.

Archibald, A. Henry, Montreal, Q.
Bolton, Thomas, Newmarket, O.
Drummond, T., Edinburgh, S.
Richard, Louis N., Montreal, Q.
Waddell, Robert W., Cobourg, O.

Occasional Students.

Donald, James T., B.A Montreal, Q.
McConnell, R. G., Cl[illegible]
Morkill, John T.
Street, H., Ottawa, O.

MORRIN COLLEGE.

FACULTY OF ARTS.

Undergraduates.

Duclos, Charles A., Quebec, Q.
Ferguson, James D., Quebec, Q.
Hemming, Henry, Montreal, Q.
Hewett, James, Quebec, Q.
Meredith, Frederick E., Quebec, Q.
Maxwell, Andrew B., New Carlisle, Q.
Pritchard, John G., Valcartier, Q.
Walker, Edward G., Quebec, Q.

Besides 10 Occasional Students.

ST FRANCIS COLLEGE, RICHMOND, P. Q.

FACULTY OF ARTS.

Undergraduates.

First Year.

Goodhue, Edward Solon, Arthabaskaville, Q.
Holland, Charles Edward, Melbourne, Q.
Mackie, John, Danville, Q.
McLeod, Norman, Brompton Gore, Q.
McKenzie, Peter S. G., Melbourne, Q.

Second Year.

Brown, Albert J., Windsor Mills, Q.
Campbell, Henry, South Durham, Q.
Duffett, Henry J., Kinnear's Mills, Q.
Kinnear, George, Kinnear's Mills, Q.

Third Year.

Ramsay, George, Orillia, O.

Occasional.

Ames, Joseph, Melbourne, Q.
Barvis, William, Arthabaskaville, Q.
Dickson, William E., Trenholmville, Q.
Graham, George, Richmond, Q.
Hamilton, James, Melbourne, Q.
Leonard, John, Winslow.
Leonard, William, Kingsbury, Q.

SUMMARY.

Students in Law, McGill College,		70
" in Medicine "		166
" in Arts "	Undergraduates,	96
	Partial and Occasional,	47
" in Applied Science,	Undergraduates,	18
	Occasional,	4
" " Morrin College,	Undergraduates,	8
	Occasional,	10
" " St. Francis College,	Undergraduates,	10
	Partial and Occasional,	7
Total number of Students,		436
Deduct entered in two Faculties,		12
		424
Teachers in training in Normal School,		137
Pupils in Model Schools		343
Total Students and Pupils,		904

Higher Examination of Women.

SENIOR ASSOCIATE IN ARTS.

1880.

GEORGINA HUNTER, Montreal.

School Certificates of the University.

ASSOCIATES IN ARTS.

1865.

Montgomery Jones.
John Ferguson.
Charles Cushing.
Robert H. Conroy.
Samuel Stevenson.
Wallace Clarke.
Frederick W. Evans.
Robert W. Forester.
Edward B. Greenshields.
Montgomerie Lewis.
George Joseph Bull.
Albert Murray.
Daniel McLachlin.

1866.

Sidney Arthur Fisher.
Charles E. Porteous.
Will. W. Walkem.
Chas. G. Stewart.
Geoffrey W. Porteous.
Florence David.
Hew. D. Whitney.
George W. Torrance.
Robt. M. Esdaile.

1867.

Charles H. Ferry.
James Rodger.
Geoffrey W. Porteous.
Thomas C. Thomson.
Francis J. Shepherd.
Gerald Lloyd.

1868.

John Fraser Torrance.
Will. Osborne M. Cross.
Henry G. W. Badgley.
John B. Abbott
John Gray Grant.
Thomas C. Hempsted.

1869.

Arthur F. Ritchie.
Simon J. Tunstall.
Charles R. Jones.
O'Hara Baynes.
Aaron D. M. DeSola.
Charles Jas. Fleet.
John Thos. Caldwell.
James M Mitchell.
John Kay.
James Green.

1870.

William Bell Dawson.
Archibald D. Taylor.
Hiram B. Stephens.
Henry W Thomas.
Samuel Greenshields.
Sheringham A. Shepherd.
William McEachran.
David S. Robertson.

1875.

William D. Lighthall.
W. A. Farwell.
Robert T. B. Howard.
Charles A. Molson.

1876.

J. Herbert Darey.
Paul Theodore Lafleur.
Edwin Hudson Bisset.
Andrew G. Ross.
James R. Foster.
Frederick Mindon Cole.
William Dawson McGregor.
John Ewart.
J. Gordon Gibson.
Wilfred T. Skaife.
Charles J. Walker.

1877.

Alexander Falconer.
Thomas B. Macaulay.
Armand F. Teefy.
Mina Douglas.
M. Stuart Fraser.
William Martin.
Walter H. Snow.
Louisa McFee.
Margaret A. Mills.
Ida Papineau.
Walter E. Lyman.
Helen Macklen.
Jane Darling.
George Graham.
Murray A. Biggar.
Jessie Ross.
Eva Dawson.
Alice Cumming.
Kenneth R. Macpherson.
Walter H. Lancey.
Robert A. Wallace.
Alexander McGibbon.
Marietta Jones.
Frank Weir.
Nathaniel D. Drew.

1878.

Henri A. Lafleur.
Grace Darling.
Henry R. Fairclough.
Andrew Lawson.
William H. Boyle.
N. J. Rielle.
George Kapelle.
John B. Rose.
Lillian Martin.
Henry Cockfield.
Louisa Harrison.
David Young.
Lawrence C. Rose.
Bessie Radford.
Kate McKeand.
Maggie Stewart.
Maggie Campbell.
A. W. Martin.
Florence W. Bissett.
C. W. Trenholme.
Robert Sterling.
Maggie White.
Frederick E. Belcher.
Anna Baxter.
Minnie Greenshields.
Emma D. Meikle.
C. D. Godfrey.
Lawrence MacRae.
Neil McLennan.

1879.

James Charles Allan.
Charles Edward Bland.

1879.—*Continued.*

George W. Hambley.
John C. Fields.
R. Norman Hudspeth.
Louisa McDonald.
Wyatt G. Johnston.
Robert Little.
Henry J. H. Petry.
Edward J. K. Noyes.
Edith Durdan.
Adolph Kraft.
Richard F. Morris.
William Morris.
Duncan D. McTaggart.
Archibald McK. McMechan.
Donald John Fraser.
John Coutts.
Thomas Crawford.
Jessie McConnell.
Devereux Emmet.
Alfred E. A. Barlow.
Elizabeth Smith.
Claude L. Wheeler.
Charles McP. Holt.
Maggie Osgood.
George S. Baker.
Arthur G. Weld.
William L. Murray.
Christina J. Galt.
George R. Mills.
Alexander Malcomson.
Thomas J. Tait.
Kenneth D. Young.
Albert W. Haldimand.

1880.

Edward H P. Blackader.
William Logan.
Mary J. MacCallum.
Walter H. Turner.
Minnie H. McKean.
Mary B. Badenach.
Wm. C. Morrison.
Robert C. Kirkpatrick.
Julius T. Gnaedinger.
Richard S. Kinghorn.
Jean W. Johnston.
Norman R Macaulay.
Hugh McLennan.
William Cherrie.
Eugene McMullan.
Elena C. Livingstone.
William Christie.
James B. McNaughton.
Lyman Duff.
John D. Courtney.
Maud M. Lamb.
William Gibson.
James B. Gibson.
Frank Baker.

JUNIOR CERTIFICATES.

1875.

Charles F. Dawson.
William C. Norris.
William S. Kerry.
Frank D. Adams.

1876.

William R. Robertson.

1877.

Annie Cussack.
Lizzie Cox.
Ella Gardiner.
Elizabeth Monk.
Jessie Logan.
Alexander W. Richardson.

1878.

George Ross.
David McKinnon.
Jane Wood.
Annie Troup.
Jennie Edgar.
Edwin W. Griffin.
Mary Troup.
Herbert R. Macaulay.
Jessie Stewart.
Alexander Ambrose.
Milton Vandewater.
Julie Somerville.
Maggie Osgood.
Fritz G. Gnaedinger.
Robert A. Elliott.
Dora Scott.
Frederick F. Kingston.
William H. Adams.

1879.

Margaret McCoy.
Ina Sutherland.
Hattie Dalley.
Grace Darling.
Margaret Wilson.
Augusta Pedersen.
George Corey Thomson.
Georgina Iles.
Mary Mitchell.
Arthur Mercer.

1880.

Jessie S. Greenshields.
William Graham.
Bertha Savage.
Ellie M. Cole.
David Ogilvie.
Jeannie Ross.
Lorrie Dickson.

STANDING IN THE EXAMINATIONS, 1880.

SENIOR ASSOCIATE IN ARTS.

Georgina Hunter, (Academy Class of McGill Normal School and Private Study), creditable answering in all the Imperative subjects and in Botany.

ASSOCIATES IN ARTS.

No.			
1.	Edward H. P. Blackader (High School, Montreal),	1009	Marks.
38.	William Logan (Collegiate Institute, Hamilton),	1005	"
37.	Mary J. McCallum (Collegiate Institute, Hamilton),	956	"
7.	Walter H. Turner (High School, Montreal),	907	"
39.	Minnie H. McKean (Collegiate Institute, Hamilton),	899	"
19.	Mary B. Badenach (Girls' High School, Montreal), } equal	894	"
42.	Wm. C. Morrison (Collegiate Institute, Hamilton), }		
4.	Robert C. Kirkpatrick (High School, Montreal),	890	"
13.	Julius T. Gnaedinger (High School, Montreal),	887	"
3.	Richard S. Kinghorn (High School, Montreal),	886	"
17.	Jean W. Johnston (Girls' High School, Montreal),	845	"
5.	Norman R. Macaulay (High School, Montreal),	784	"
6.	Hugh McLennan (High School, Montreal),	746	"
48.	William Cherry (Collegiate Institute, Hamilton),	730	"
46.	Eugene McMillan (Collegiate Institute, Hamilton),	703	"
18.	Elena C. Livingstone (Girls' High School, Montreal),	697	"
71.	William Christie (Lachute College),	678	"
44.	James B. McNaughton (Collegiate Institute, Hamilton),	654	"
40.	Lyman Duff (Collegiate Institute, Hamilton),	648	"
49.	John D. Courtenay (Collegiate Institute, Hamilton),	620	"
24.	Maud L. Lamb (Girls' High School, Montreal),	607	"
50.	William Gibson (Collegiate Institute, Hamilton),	528	"
35.	James B. Gibson (Dunham Academy),	474	"
36.	Frank Baker (Dunham Academy),	418	"

JUNIOR CERTIFICATES.

23.	Jessie G. Greenshields (Girls' High School, Montreal),	652	Marks.
14.	William Graham (High School, Montreal),	633	"
45.	Bertha Savage (Collegiate Institute, Hamilton),	618	"
22.	Ellie M. Cole (Girls' High School, Montreal),	497	"
29.	David Ogilvie (Senior School, Montreal),	488	"
26.	Jeannie Ross (Senior School, Montreal),	386	"
31.	Lizzie Jackson (Senior School, Montreal),	381	"

STANDING IN THE SEVERAL SUBJECTS.

[The numbers correspond with those in the preceding list. The numbers in parentheses are equal in standing.]

I. Preliminary.

Reading.—(18, 35), (3, 11, 12, 13, 23, 26, 28, 30, 36, 45), (40, 58), (1, 8, 9, 17, 21, 22, 24, 25, 47), (4, 6, 16, 56), (5, 7, 10, 19, 20, 29, 31, 32, 38, 39, 50, 71), (42, 44), (37, 41, 43, 46), (2, 14, 15, 33, 48, 49, 57).

Dictation.—(37, 38), 12, (30, 39), (17, 23), (28, 45), (14, 18, 40, 48), (3, 4, 11, 13, 20, 22, 29, 33, 42), (1, 6, 41), (7, 49, 58), (8, 9, 10, 25, 31, 57), (26, 43, 46), (15, 21), (5, 56), 19, (2, 6, 36), 35, (44, 50), (24, 32, 47, 71).

English Grammar.—25, (38, 42, 45), (41, 44), (37, 46), (1, 18, 19, 40, 47, 48, 49), 39, (4, 12, 20, 50), 57, (2, 7, 11, 13, 24), (3, 5, 17, 56), (6, 8, 10, 21, 28, 36), (15, 22, 23, 43, 58), 9, (14, 26, 35), (30, 31), (29, 71).

Arithmetic.—(1, 4), 3, (6, 37), 13, 38, 42, 48, (15, 41), 5, 44, 29, (7, 24), (26, 45), 49, 19, 39, (8, 40, 47), (23, 48), 71, 35, 17, (14, 22, 25), 21, 36, 43, 28, 31, (11, 12), (2, 9, 46), 30, (10, 18).

Geography.—(17, 18, 38, 40), (19, 37, 39, 45), (22, 23), 42, 1, 41, 48, (2, 3, 12, 21, 28, 49, 71), (4, 25, 44, 56), 11, (43, 47, 57, 58), (6, 10, 32), 46, (7, 8, 26, 29, 31, 35, 36), (9, 13, 16, 20), 5, 24, (14, 15), 33, 50.

British and Canadian History.—42, 1, (7, 17, 18, 37, 38,), (3, 12), 4, 31, 71, (2, 6, 9, 19, 22, 23, 24, 39, 40, 41, 45), (25, 36, 44), 10, 49, (5, 14, 21, 29, 46, 48), (8, 15, 26, 35), 50, 13.

Gospels (Creditable answering).—1, 3, 4, 5, 6, 8, 9, 10, 13, 15, 17, 18, 19, 22, 23, 25, 37, 38, 39, 42, 44, 45, 48, 49, 56, 57, 58.

II.—Optional.

Latin.—38, 37, (4, 39), 1, 42, 17, 7, 18, (3, 5), (6, 25), (44, 49), (40, 50), (71, 48), 36, 24, 20, 19, (35, 46), 57, 21.

Greek.—38, 48, 4, 3, (46, 71), (5, 7), 40, (44, 50), (42, 49), 6, 56.

French.—25, 17, (11, 21), (3, 27), 39, 19, 22, 24, 4, 7, 18, 45, (1, 57), 36, (20, 23), 5, 12, 56, 71, 29, 35, (2, 31), (14, 26, 33).

German.—17, 23, 24, 19, (25, 28), 20, 39, 37, 13, 46.

Geometry.—38, 42, 13, 39, 37, 48, 5, 12, 44, (45, 50), 14, 1, 40, 71, 6, 7, (4, 26, 46), 49, 29, 3, 31, 56, 9, 35, (10, 19), 28, 36, (8, 23), (16, 22), 58, 17, 18, 57, (15, 47).

Algebra.—38, 13, (7, 40), 42, 39, 37, 19, 6, 45, (1, 3, 44), 25, 12, 48, 71, 49, (4, 14), 46, 17, 22, 50, (5, 35), 24, (9, 29).

Trigonometry.—13, 19.

Natural Philosophy.—13.

English Language.—39, 12, 1, 7, 48, 37, 46, 42, 4, 3, (2, 44, 45), (6, 38).

English Literature.—7, 25, 1, 12, (18, 19), 3, 42, 10, 5, 17, (4, 9, 13, 23), 38, 24, (8, 20), 21, (28, 37), 2, 14, 6.

History.—18, 12, (1, 9), 7, (4, 25), (3, 19), 5, 6, (8, 14, 22), 10, (16, 17), (13, 29, 56), 2, 15, 31, (20, 24, 48, 58).

Geography.—19, 17, 1, 18, 5, 25, (7, 10, 14), 3, 6, (13, 37), (9, 58), (4, 71), 2, 12, 8, 38, (39, 45), 42, 23, (11, 49, 56), 16, 47, 44, 57, 15, 50.

Botany.—12, 14, 25, 46, 29, 21, 13, 23, 26, 10, 35, 20, 16, 36, 11, 30, 15, 31, 32, 33.

LIST OF THE PRINCIPAL DONATIONS

TO THE

LIBRARY AND COLLECTIONS OF THE FACULTIES OF ARTS AND APPLIED SCIENCE.

FROM MAY, 1879, TO MAY, 1880.

1.—TO THE LIBRARY.

Government of the Dominion of Canada.....	Index to the Catalogue of the Library of Parliament. Part. II. 8vo.
Principal Dawson, LL.D., F. R. S.....	Geological Record for 1874. 8vo.
do do	The Genesis and Migrations of Plants. pam. 8vo.
do do	Remarks on Recent Papers on the Geology of Nova Scotia. pam. 8vo.
do do	On the Microscopic Structure of Stromatoporidæ, etc. pam. 8vo.
do do	Mobius on Eozoon Canadense. pam. 8vo.
Government of the Dominion of Canada through M. H. Gault, Esq., M. P.....	Dobson. On the Coal Industry of the Dominion. pam. 8vo.
do do	Report of the Secretary of State of Canada for 1878. pam. 8vo.
do do	Report of the Minister of Justice as to Penitentiaries in Canada for the year ended 30th June, 1878. pam. 8vo.
A. R. C. Selwyn, Esq., F. R. S.....	Exposition Universelle de 1878 a Paris.—Catalogue des Mineraux, Roches et Fossiles du Canada. pam. 8vo.
Prof. Harrington, Ph. D.....	The same.
Government of Nova Scotia.....	Report of the Department of Mines, N. S., for 1878. pam. 8vo.
Institution of Civil Engineers, London, Eng..	Minutes of Proceedings. Vol. LV. Session 1878–79. 8vo.
G. M. Dawson, Esq., F. G. S.....	Notes on the Glaciation of British Columbia. pam. 8vo.
do do	On a New Species of Loftusia from British Columbia. pam. 8vo.
McGill University Graduates' Society.....	Taylor, Rev. Isaac, Words and Places. 12mo.
M. H. Gault, Esq., M. P.....	Budget Speech in the House of Commons of Canada, March 14th, 1879, by the Hon. S. L. Tilley. pam. 8vo.
do do	Map of the Townships Surveyed in the Province of Manitoba.
do do	Manitoba and the North West Territories. pam. 4to.
Royal Institute of British Architects.....	Transactions, 1878–79. Nos. 1–4 and 9. 5 pam. 8vo.
Harbour Commissioners of Montreal.....	Annual Reports for the years 1876–77–78. 4 pam. 8vo.
Institution of Surveyors, London, Eng....	Transactions. Sessions 1868–9 to 1877–78. 10 vols. 8vo.
Government of the Dominion of Canada.....	Census of Canada, 1870–71. Vol. V. 8vo.
do do	Annual Report of the Department of the Interior for the years ended June 30th, 1874–78. 1 vol. 8vo. and 3 pam. 8vo.

M. H. Gault, Esq., M. P.	Record of the Proceedings of the Halifax Fisheries Commission. sm. fol. pap.
do do	Report of the Commissioner of Fisheries for 1877. pam. 8vo.
do do	Report of the Postmaster General for the year ending June 30th, 1878. pam. 8vo.
do do	Other Parliamentary Papers. 5 pam. 8vo.
Harvard College Library	Library Bulletin. No. 12. pam. 8vo.
His Excellency The Governor General of Canada	London University Calendar for 1879. 8vo.
Astronomer Royal, Greenwich, Eng	Greenwich Observations, 1876. 4to.
do do	Greenwich Astronomical Results, 1876. 4to.
do do	Greenwich Magnetical and Meteorological Observations, 1876. 4to.
do do	Greenwich New Year Catalogue of 2263 Stars for 1872. 4to.
do do	Greenwich Meteorological Observations, 1847–1873, Reduction of. 4to.
do do	Cape of Good Hope, Results of Astronomical Observations. 1859 and 1860, and 1875. 2 vols. 8vo.
Institution of Civil Engineers, London, Eng.	Minutes of Proceedings. Vols. LIII, LIV, and LVI, Session 1877–78. 3 vols. 8vo.
Miss Abbott	Betham's (Sir W.) Etruria Celtica. 2 vols. 8vo.
do	Adam's Geometrical and Graphical Essays. 8vo.
Editor of Canadian Journal, Toronto	Proceedings of the Canadian Institute. New Series. Part 1st to Vol. 1. pam. 8vo.
A. R. C. Selwyn, Esq., F. R. S.	Mesozoic Fossils. By J. F. Whiteaves. pam. 8vo.
Cobden Club, London, Eng	Reciprocity. By Sir L. Mallet. pam. 12mo.
Directeur de L'Ecole Nationale des Ponts et Chaussees, Paris	Collection de Dessins. 18 planches. fol. Legendes Explicatives. 15e Livrason. 8vo. pap.
Society of Engineers, London, Eng	Transactions for 1878. 8vo.
Chief Signal Officer, War Department, Washington, U. S.	Annual Report for the year 1878. 8vo.
Prof. Johnson, LL.D	Tredgold, On the Steam Engine, &c. Vol. I. 4to. With Atlas. fol.
Harbour Commissioners, Montreal	Profile of the River St. Lawrence between Montreal and Quebec, shewing the Deepening of the Ship Channel.
Toronto University	Calendar of University College, Toronto, for 1879-80. 8vo.
Trustees of the British Museum	Catalogue of the Birds in the British Museum. Vol. IV. 8vo.
do do	Index to the Collection of Minerals in the British Museum, 1878. pam. 8vo.
do do	Lepidoptera Heterocera. Part II. 4to.
R. J. Wicksteed, Esq	The Consolidated Railway Act, 1879. With Index.
Chief of Engineers, War Department, Washington, U. S.	Annual Report for the year 1878. 8vo.
Government of the Dominion of Canada	Sessional Papers. Nos. 1-10 to Vol XII. vols. 8vo.
do do	Census of Canada, 1870–71. Vol. V. 8vo.
do do	Statutes of Canada, 1879. Vols 1 and 2 in one. 8vo.
do do	Journals of the House of Commons, Canada, 1879. Vol. XIII. 8vo.
do do	Journals of the Senate of Canada, 1879. Vol. XIII. 8vo
McGill College Book Club	132 Vols, comprising recent publications on various subjects.
R A. Ramsay, Esq., M. A.	Wycliffe's Bible. 4 vols. Large 4to.
University Library, Cambridge	Cambridge University Reporter, June, 1879. pam. 8vo.
University of Manitoba	Statutes and Ordinances respecting Matriculation and Examination for Ordinary B. A. Degree. pam. 8vo.
Institution of Civil Engineers, London, Eng.	Minutes of Proceedings. Vols LVII and LVIII. 8vo.
do do	List of Members of the Institution. pam. 8vo.
do do	Charter, By-Laws and Regulations, and List of Members, 1879. 8vo.
Edinburgh University	Calendar for 1879–80. 8vo.
Royal Society of London, England	Philosophical Transactions. Vols 168 (Extra vol.) and 169 (Part 2nd). 2 vols. 4to.
do do	Proceedings. Nos. 190–195 to vol. XXVIII. 6 pam. 8vo.

Royal Society of London, England	Catalogue of Scientific Papers. Vol. VIII. 4to.
University of Christiania, Norway	Broch, Le Royaume de Norwege. 8vo. pap.
do do	Heilagra Manna Sogur. 2 vols. 8vo. pap.
do do	Det Kongelige Fredericks Universitets Aarsberetning for 1876 and 1877. 2 pam. 8vo.
do do	Index Scholarum—Stratification—Ringen i Forsa Kirke. 3 pam. 4to.
do do	Poncelet's Betydning for Geometrien. pam. 8vo.
do do	Two Maps of Norway.
Dr. Sterry Hunt	286 Vols, comprising French Works on historical, literary, philosophical and political subjects.
Dr. B. J. Harrington	Report on the Minerals of some of the Apatite-Bearing Veins of Ottawa County. 2 pam. 8vo.
McGill University Graduates' Society	Fairbairn, Mechanism and Machinery of Transmission. 8vo.
do do	Clevenger, Treatise on the Method of Government Surveying. 12mo.
Mrs. J. Redpath	Couche, Voie, Materiel Roulant et Exploitation Technique des Chemins de Fer. 3 vols. 8vo. With Atlas. 3 vols. 4to. pap.
do do	Debauve, Manuel de L'Ingenieur des Ponts et Chaussees. 2 vols. 8vo. pap. With Atlas. 2 vols. 4to. pap.
do do	Desnoyers, Notice sur les Travaux Publics en Hollande. With Atlas. 3 vols. 4to pap.
do do	Morandiere, Traite de la Construction des Ponts et Viaducs en Pierre, en Charpente et en Metal. fol.
Government of Washington	U S. Coast Survey. Report of the Superintendent for 1874. 4to.
do do	Medical and Surgical History of the War of the Rebellion. Part II. to Vol. I. 4to.
do do	Report of the U. S. Commissioner of Fish and Fisheries for 1871–72, to 1877. 5 vols. 8vo.
Principal Dawson, LL.D., F. R. S.	Lyell's Elements of Geology. The Student's Series. 8vo.
do do	A new Application of Rapid Oxidation, by which Sulphides are utilized for Fuel. pam. fol.
Government of the Dominion of Canada	Report of Progress of the Geologial Survey of Canada for 1877–78. With Maps.c8vo. pap.
Prof. Moyse, B.A.	The Dramatic Art of Shakespeare (An Inaugural Lecture). 8vo.
Graduates of the Faculty of Arts, McGill University	Photographs of the Professors and Graduates in Arts, Session 1878–79. sm. 4to.
Government of the State of Pennsylvania, U. S.	Second Geological Survey of Pennsylvania : 1876–8. M.M.—Northern Townships of Butler County. 2 vols. 8vo.
A. R. Selwyn, Esq., F. R. S.	Report of Progress of the Geological Survey of Canada for 1877–78. With Maps. 2 vols. 8vo.
Trustees of the British Museum	Smith's Descriptions of New Species of Hymenoptera in the Collection of the British Museum.
Prof. Darey, M.A.	Webster on the Annelida Chœtopoda of the Virginian Coast. pam. 8vo.
James Croil, Esq.	Presbyterian Record for the Dominion of Canada. January, 1878—December, 1879. 8vo.
Committee of the Cobden Club, London, Eng.	Mongredien, Free Trade and English Commerce, 1879. pam.
do do	Financial Reform Almanac for 1880. pam. 8vo.
Toronto University	Examination Papers, 1879. 8vo.
Government of the Province of Quebec	Statutes of Quebec, 1879, English and French. 2 vols. 8vo.
do do	Sessional Papers. 1 to 31. Vol II. Session 1877–78. 8vo.
do do	Journals of the Legislative Council. 1879. Vol. XIII. 8vo.
Superintendent of Education of the Province of Quebec	Report for the year 1877–78. 8vo. pap.
American Institute of Mining Engineers, Easton, Pa.	Transactions, May, 1878, to February, 1879. Vol. VII. 8vo. pap.
American Society of Civil Engineers	Transactions, January, 1879—December, 1879. Vol. VIII. (12 pam). 8vo.
Government of Japan	Geological Survey of Japan. Reports of Progress for 1878 and 1879. pam. 8vo.

A. H. Winchell, Esq., U. S. Geologist	Seventh Annual Report of the Geological and Natural History Survey of Minnesota for the year 1878. pam. 8vo.
Smithsonian Institution	Smithsonian Miscellaneous Collections. Vols. XIII–XV. 8vo. pap.
do do	Smithsonian Contributions to Knowledge. Vol. XVIII–XXI. 4to.
do do	Smithsonian Reports for the years 1873–1877. 5 vols. 8vo.
American Philosophical Society, Philadelphia	Proceedings, No. 104 to vol. VIII. pam. 8vo.
Civil Engineers' Club of the Northwest, Chicago, Ill	Proceedings. Vol. IV. 8vo.
Liverpool Polytechnic Society	Journal of the L. P. Society. 4 pam. 8vo. With Annual Report for 1879, including a List of Members, 1880. pam. 8vo.
Superintendent of the U. S. Coast and Geodetic Survey	Pacific Coast Pilot. Meteorology and Bibliography of Alaska. 4to.
Minister of Education of the Province of Ontario	Report for the year 1878. pam. 8vo.
T. Sterry Hunt, Esq., LL.D	70 vols., comprising works of a Biographical, Historical, Scientific and Statistical character.
McGill College Book Club	69 Vols, comprising recent publications on various subjects.
Harbour Commissioners of Montreal	Annual Reports for the year 1879. 2 copies. 8vo.
J. Gulliver, Esq., F.R.S	The Hunterian Oration. pam. 8vo Notes on some of the Researches in Anatomy, Physiology, etc. pam. 8vo.
G. T. Kingston, Esq., M.A	Report of the Meteorological Service of the Dominion of Canada, for 1878. 8vo. pap.
Trustees of the Radcliffe Library, Oxford University	Catalogue of Books added to the Radcliffe Library during the year 1879. pam. 4to.
McGill University Graduates' Society	Loomis, Treatise on Meteorology 8vo.
do do	Green, A short History of the English People. 8vo.
do do	Campbell, Philosophy of Rhetoric. 8vo.
do do	Smith, Ancient History of the East. 8vo.
do do	Bonitz, Origin of the Homeric Poems. 16mo.
do do	Taylor, Studies in German Literature. 8vo.
do do	Goethe and Schiller: Their Lives and Works. 8vo.
do do	Shakespeare. Select Plays. 5 vols. 12 mo.
do do	Cowper's Poems. 2 vols. 12mo.
do do	Dryden, Select Poems. 12mo.
do do	Milton Areopagitica. 12mo.
do do	Lockyer, Elementary Lessons in Astronomy. 16mo.
do do	Questions on Lockyer's Elementary Lessons in Astronomy. 16mo.
do do	Sweet, Anglo-Saxon Reader. 12mo.
do do	Earle's Book for the Beginner in Anglo-Saxon 12mo.
do do	Longfellow's Poems. 8vo.
do do	Browning's (Mrs. E. B.) Poems. 8vo.
Howard Association, London, Eng	Papers on Prisons and Capital Punishment. With the Report of the Association for 1879. 4 pam. and 8 sheets. 8vo.
Astronomer Royal, Greenwich, Eng	Greenwich Observations, 1877. 4to.
do do	Greenwich Magnetical and Meteorological Observations, 1877. 4to.
do do	Greenwich Astronomical Results, 1877. 4to.
do do	Cape of Good Hope, Results of Astronomical Observations, 1876. 8vo.
Sir Francis Hincks, K. C. M. G	Hincks (T.), A History of the British Hydroid Zoophytes. 2 vols. Large 8vo.
G. T. Kingston, Esq., M.A	Report of the Meteorological Office of the Dominion of Canada, for 1878. pam. 8vo.
Peter Redpath, Esq	Lingard's History of England. 12 vols. 8vo.
do do	Modern British Essayists. 5 vols. 8vo.
do do	Lives of the Queens of England. 6 vols. 8vo.
do do	Macaulay's History of England. 5 vols. 8vo.
do do	Arago's Biographies. 2 vols. 8vo.
do do	Scouring of the White Horse. 8vo.
do do	Yeast. A Problem. 8vo.
do do	Ruskin, Economy of Art. 8vo.
do do	Charlesworth, England's Yeomen. 8vo.
do do	Lyell, Travels in North America. 8vo. pap.
do do	Tupper's Complete Poetical Works. 8vo.

Peter Redpath, Esq.	Colenzo (Bp), The Pentateuch and the Book o Joshua. 8vo.
do do	—— St. Paul's Epistles to the Romans. 8vo.
do do	Overman, Treatise on Metallurgy. 8vo.
do do	Percy's Metallurgy, Iron and Steel. 8vo.
do do	Layard's Nineveh and Babylon. 8vo.
do do	Forster, British Statesmen. 8vo.
do do	Census of Great Britain, 1851. 8vo. pap.
do do	Kinglake, Invasion of the Crimea. 2 vols. 8vo.
do do	Canadian Pacific Railway. Report of Progress on the Exploration and Surveys to January, 1874. 8vo.
do do	—— Maps and Charts to accompany Report on C. P. R. 8vo.
McGill University Graduates' Society	Parkman, The Old Regime in Canada. 8vo.
do do	—— La Salle and the Discovery of the Great West. 8vo.
do do	James, Hawthorne. 8vo.
do do	De Mille, Elements of Rhetoric. 8vo.
do do	Unwin, Elements of Machine Design. 12mo.
do do	De Roos, Linkages. 16mo.
do do	Andre, Practical Treatise on Rock Blasting. 8vo.

II.—TO THE MUSEUM.

From A. R. C. Selwyn, F. R. S.	Twelve polished specimens Canadian Marbles.
" G. Barnston, Esq.	Collection of Arctic and Boreal Plants, and of Grasses, Mosses, &c.
" Albert J. Hill, Esq., C. E.	Rock Specimens from the Canada Pacific Railway.
" J. Beaumont Small, M.D.	Nodules from the Post-pliocene of Green's Creek.
" J. G. Miller, Esq.	Nodules from the Lievre R.
" Dr. B. J. Harrington	Fossils from Lake Matapedia.
" Dr. J. W. Spencer	Fossil Corals from the Corniferous Limestone.
" A. R. C. Selwyn, Esq., F.R.S.	33 Specimens of Mesozoic and Tertiary Fossils.
" Mr. J. T. Morkill	Specimens of Chrysotile from Thetford, P.Q.
" D. Sidey, Esq. (per T. D. King, Esq)	Jaws of a Shark (*Galeocerdo*).
" Prof. Ramsay Wright	Alcoholic Animal Preparations from Europe.
" Dr. T. Sterry Hunt, F.R.S.	Thirty-three Specimens of Canadian Fishes, prepared and mounted by Mr. Wm. Couper.
" Dr. McDiarmid, Athol, Ontario	Knife of Native Copper.
" Mr. H. M. Ami	Specimens of Fossils from the Ottawa.
" Richard G. McConnell, B.A	Copper Implement from Chatham, P.Q.
" J. F. Torrance, B.A.	Specimen of Native Gold from Nova Scotia.

Addenda.

I. SUMMER SESSION IN THE FACULTY OF MEDICINE.

APRIL 15TH—JULY 8TH, 1880.

The Classes are chiefly practical and demonstrative, and are designed to supplement and extend the teaching of the regular winter Session.

The experience of the past sessions has been very encouraging, both in regard to the numbers in attendance and the diligence with which the classes have been followed; and the Faculty hopes that all students will endeavour to take one or two of these extra Sessions, the fees for which have purposely been placed so low as to be almost nominal.

The special advantages of attendance upon a Summer Session are:—

(1) The benefit derived from the practical and demonstrative classes.

(2) Dresserships and Clinical Clerkships are more easily obtained at the Hospitals, and the student has more time at his disposal to follow up the cases.

(3) Cases of Midwifery are obtained in greater numbers at the Lying-in-Hospital.

(4) Systematic study can be carried out more effectively than at home.

The advantages offered by the city of Montreal for the practical study of Medicine and surgery are unequalled in the Dominion. In the wards of the General Hospital there is always—and more particularly in the summer months, when navigation is opened—a large collection of interesting medical and surgical cases. In the out-door department there is a daily attendance of between 75 and 100 patients, which affords excellent instruction in minor surgery, noutire

medical practice, and diseases of children. The Eye and Ear Department, will afford to the student an opportunity of studying practically, under skilled direction, these important branches.

Dresserships and Clinical Clerkships may be obtained on application to the Attending and Out-Door Physicians.

The Faculty has much pleasure in announcing the following prospectus :

Clinical Instruction at Bedside ; daily. DAILY, 12.30–2.30.	**Surgery** ... **Medicine** ... — **Dr. Fenwick. Dr. Osler.**
Urinary Disorders.—The urine in Health and Disease. Demonstrations on Urinary deposits, Chemical and Microscopical. TUESDAYS, 11 a.m.	**Geo. Ross, M.A., M.D.** Prof. of Clinical Medicine.
Genito-urinary System.—Lectures and Demonstrations on the Surgical Diseases of. FRIDAYS, 11 a.m.	**T. G. Rodderick, M.D.** Prof. Clinical Surgery.
Diseases of Women.—Methods of examining patient ; use of speculum and uterine sound ; disorders of menstruation ; leucorrhœa, its causes and treatment ; tumours of the uterus, displacements of uterus, &c. MONDAYS & THURSDAYS, 11 a.m.	**D. C. McCallum, M.D.** Prof. of Midwifery and Diseases of Women.
Practical Gynecology.—for senior Students, at the University Dispensary for Women THRICE WEEKLY	**Drs. McCallum and Gardner.**
Diseases of Children.—Anatomical and physiological peculiarities of infancy and childhood ; mode of examination of sick children ; peculiarities of symptoms ; therapeutics and dosage ; consideration of the more common and important diseases of childhood. THURSDAYS, 10 a.m.	**Wm. Gardner, M.D.** Prof. of Medical Jurisprudence.
Ophthalmic and Aural Surgery.—Twelve Clinical Lectures on cases in the Theatre. Extra hours for Ophthalmoscopic work, and instruction in operations. MONDAYS, 10 a.m.	**F. Buller, M.D.** Lecturer on Ophthalmology and Otology.
Operative Surgery. FRIDAYS, 10 a.m.	**F. J. Shepherd, M.D.** Demonstrator of Anatomy.
Minor Surgery.—Bandaging, application of splints, hæmostatics, catheterism, &c. WEDNESDAYS, 10 a.m.	**R. L. MacDonnell, M.D.** Asst. Demonstrator of Anatomy.

Orthopœdic Surgery.—Six Lectures and demonstrations.
DAYS TO BE NAMED..... — **T. G. Roddick, M.D.** Prof. of Clinical Surgery.

Diseases of the Skin.—Twelve Lectures and Demonstrations.
DAYS TO BE NAMED. — **T. G. Roddick, M.D.** **F. J. Shepherd, M.D.**

Practical Pathology.—consisting of twenty demonstrations in the autopsy-room of the hospital. Students will make the post-mortems in rotation, and receive instruction in the method of performing them, and keeping record of their observations.—BI-WEEKLY, 1 p.m..... — **Wm. Osler, M.D.** Prof. of Physiology and Pathology.

Practical Obstetrics.—Instruction in the diagnosis of presentations and the clinical management of cases..... — **A. A. Browne, BA., M.D.** Clinical Assistant to the Prof. of Midwifery.

All students desirous of attending the above courses, are expected to register their names with the Registrar, *within one week* after the beginning of the Session, and to pay a *fee of* $10, when a ticket will be issued admitting to the lectures, which ticket must be presented. Enregistration and payment of the fee are compulsory upon all students whether attending one or more of the classes.

A printed certificate of attendance will be issued at the close of the Session.

The following courses will be also conducted during the summer, and may be taken by enregistered students.

Practical Chemistry, including blowpipe manipulation, qualitative analysis, toxicological investigations, analysis of urine, &c. This course is the same as, and may be taken in lieu of, the Sessional Course during the winter, *Fee* $12.
MON., WED., and FRIDAYS, 3-5 p.m..... — **G. P. Girdwood, M.D.** Prof. of Practical Chemistry.

Practical Histology, normal and pathological. A course of twenty lessons. Microscopes, reagents, and material provided. *Fee*, $15.
TUESDAYS & THURSDAYS, 3-5 p.m..... — **Wm. Osler, M.D.** Prof. of Physiology and Pathology.

[A similar session will be held in the spring of 1881, of which due announcement will be made.]

II. MATRICULATION IN THE FACULTY OF LAW.

The books at present prescribed are the following :—

Latin.—Virgil, Æneid, Book 1.; Cicero, Pro Lege Manilia ; Caesar, Bel. Gal. Bk. I.

French.—De Fivas' "Grammaire des Grammaires ;" *Molière, 'Le Bourgeois Gentilhomme ;' † Translation into French of Macaulay's Essay on Frederick the Great.

Exercises in composition and grammatical analysis, in English and French.

Mathematics.—Arithmetic ; Algebra to the end of simple equations ; Euclid, Books I., II., III.

History.—White's Outline of Universal History (or any equivalent manual), *Green's Short History of the English People ; Miles' School History of Canada ; † Duruy Histoire de France.

Literature.—* Collier's Biographical History of English Literature ; † Laharpe, Cours de Littérature ; † Lefranc, Cours de Littérature.

Rhetoric.—Whately's Rhetoric ; Blair's Lectures (small edition).

Philosophy.—* Whately's Logic ; † La Logique de Port Royal ; † Cousin, Histoire de la Philosophie ; * Stewart's Outline of Moral Philosophy.

N.B. The works mentioned above preceded by an asterisk are for English students only. Those preceded by a cross are for French students only. The remainder are for both English and French.

III. LECTURES TO NOTARIAL STUDENTS IN THE FACULTY OF LAW.

Theory and Practice of Notarial Deeds and Proceedings.

Lecturer :—Lewis A. Hart, M.A., B.C.L.

A course of lectures imperative to Notarial Students, optional to Law Students, will be delivered in the Session of 1880–81. Details will be announced at the beginning of the Session.

CONTENTS.

I. GENERAL ANNOUNCEMENTS.

Benefactors, Calendar, Governing Body, Officers of Instruction, General Statement ..... Page 1 to 16.

II. FACULTY OF ARTS.

Admission 18
Apparatus (Philosophical)..... 47
Attendance 34
Boarding houses..... 33
Conduct..... 34
Course of Study..... 17
Degrees 25
Examinations..... 24
Exemptions from Fees..... 23
" in Course of Study...27–29
Exhibitions.....20–22
Fees..... 36
Honours..... 27

LECTURES :—

" Ordinary.....37–42
" Honour 42–47
Library..... 34
Matriculation..... 18
Medals..... 30
Museum.....35–47
Prizes..... 30
Scholarships 20
Time-table 49

III. FACULTY OF APPLIED SCIENCE.

Admission..... 52
Course of Study..... 54
Courses of Lectures 58
Degrees..... 55
Examinations..... 55
Exhibitions and Prizes..... 53
Fees..... 57
List of Models..... 64
Text Books..... 64
Time-table..... 68

IV. FACULTY OF MEDICINE.

Admission..... 70
Courses of Lectures..... 72
Degrees 77
Examinations 78
Fees..... 81
Hospitals 83
Medals and Prizes 80–89
Medical Society..... 83
Museum and Library..... 82
Past Session..... 85
Qualifications for Degrees..... 77
Time-table..... 90

V. FACULTY OF LAW.

Admission..... 93
Course of Study..... 92
Degrees..... 96
Fees 95
Regulations..... 93

VI. UNIVERSITY SCHOOL EXAMINATIONS.

For Associate in Arts and Junior Certificate..... 97
Higher Examination of Women.. 101

VII. EXTRACTS FROM REGULATIONS.

Academical Dress..... 104
Affiliated Schools..... 104
University Meetings..... 106

VIII. MCGILL NORMAL SCHOOL.

Admission, &c..... 108
Course of Study..... 110
Model Schools..... 115
Regulations..... 114

IX. UNIVERSITY LISTS &c.

Passed the University Examinations, 1879–80..... 117
Exhibitions and Scholarships..... 120
Prizes, Honours and Standing, 1879–80..... 121
Graduates..... 139
Students..... 153
School Certificates..... 159
Donations to Library and Museum 164
Addenda 169

EXAMINATION PAPERS

OF THE

McGILL UNIVERSITY,

MONTREAL.



SESSION OF 1879-80.

Montreal:
PRINTED FOR THE UNIVERSITY BY JOHN LOVELL & SON,
St. Nicholas Street,
1880.

ORDER OF EXAMINATION PAPERS.

MATRICULATION EXAMINATION, 1879. PAGE 5

SCHOLARSHIP AND EXHIBITION EXAMINATIONS, 1879. PAGE 9

SESSIONAL EXAMINATIONS, 1880.

CLASSICS :—

(1) *Ordinary* 45
(2) *Honour* 63

MATHEMATICS AND NATURAL PHILOSOPHY :—

(1) *Ordinary* 77
(2) *Honour* 87

ENGLISH LITERATURE :—

(1) *Ordinary* 95
(2) *Honour* 104

LOGIC AND MENTAL AND MORAL PHILOSOPHY :—

(1) *Ordinary* 116
(2) *Honour* 121

MODERN LANGUAGES :—

(1) *French* 127
(2) *German* 134

HEBREW AND CHALDEE 141

NATURAL SCIENCES AND CHEMISTRY :—(Botany—Zoology—Geology—Mineralogy—Lithology and Physical Geology—Geology and Palæontology) :—

(1) *Ordinary* 143
(2) *Honour* 147

FACULTY OF APPLIED SCIENCE :—(Civil Engineering—Mining—Surveying—Engineering—Assaying—Elementary Chemistry) 153

EXAMINATION PAPERS IN LAW 205

EXAMINATION PAPERS IN MEDICINE 216

EXAMINATIONS FOR SCHOOL CERTIFICATE 222

MATRICULATION EXAMINATIONS.

1879.

CLASSICS.

TUESDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

(A) 1. Translate, Homer, Iliad, Bk. I.:—

Ὣς φάτο· Πηλείωνι δ' ἄχος γένετ', ἐν δέ οἱ ἦτορ
στήθεσσιν λασίοισι διάνδιχα μερμήριξεν,
ἢ ὅγε φάσγανον ὀξὺ ἐρυσσάμενος παρὰ μηροῦ
τοὺς μὲν ἀναστήσειεν, ὁ δ' Ἀτρεΐδην ἐναρίζοι,
ἠὲ χόλον παύσειεν ἐρητύσειέ τε θυμόν.
εἷος ὁ ταῦθ' ὥρμαινε κατὰ φρένα καὶ κατὰ θυμὸν,
ἕλκετο δ' ἐκ κολεοῖο μέγα ξίφος, ἦλθε δ' Ἀθήνη
οὐρανόθεν· πρὸ γὰρ ἧκε θεὰ λευκώλενος Ἥρη,
ἄμφω ὁμῶς θυμῷ φιλέουσά τε κηδομένη τε.
στῆ δ' ὄπιθεν, ξανθῆς δὲ κόμης ἕλε Πηλείωνα,
οἴῳ φαινομένη· τῶν δ' ἄλλων οὔτις ὁρᾶτο.
θάμβησεν δ' Ἀχιλεὺς, μετὰ δ' ἐτράπετ', αὐτίκα δ ἔγνω
Παλλάδ' Ἀθηναίην· δεινὼ δέ οἱ ὄσσε φάανθεν.

2. Parse carefully the following words:—*γένετ'*, *οἱ*, *ὀξύ*, *ἀναστήσειεν*, *φρένα*, *κολεοῖο*, *οὐρανόθεν*, *στῆ*.

(B) 1. Translate, Xenophon, Anabasis, Bk. I.:—

Κῦρος δέ, ἔχων οὓς εἴρηκα, ὡρμᾶτο ἀπὸ Σάρδεων· καὶ ἐξελαύνει διὰ τῆς Λυδίας σταθμοὺς τρεῖς, παρασάγγας εἴκοσι καὶ δύο, ἐπὶ τὸν Μαίανδρον ποταμόν. τούτου τὸ εὖρος δύο πλέθρα· γέφυρα δὲ ἐπῆν ἐζευγμένη πλοίοις ἑπτά. Τοῦτον διαβὰς ἐξελαύνει διὰ Φρυγίας σταθμὸν ἕνα, παρασάγγας ὀκτώ, εἰς Κολοσσάς, πόλιν οἰκουμένην, εὐδαίμονα καὶ μεγάλην. ἐνταῦθα ἐμεινεν ἡμέρας ἑπτά· καὶ ἦκε Μένων ὁ Θετταλὸς, ὁπλίτας ἔχων χιλίους καὶ πελταστὰς πεντακοσίους, Λόλοπας καὶ Αἰνιᾶνας καὶ Ὀλυνθίους. Ἐντεῦθεν ἐξελαύνει σταθμοὺς τρεῖς, παρασάγγας εἴκοσιν, εἰς Κελαινάς, τῆς Φρυγίας πόλιν οἰκουμένην μεγάλην καὶ εὐδαίμονα. ἐνταῦθα Κύρῳ βασίλεια ἦν καὶ παράδεισος μέγας, ἀγρίων θηρίων πλήρης, ἃ ἐκεῖνος ἐθήρευεν ἀπὸ ἵππου, ὁπότε γυμνάσαι βούλοιτο ἑαυτόν τε καὶ τοὺς ἵππους.

2. Parse carefully :—*εἴρηκα, ὥρμᾶτο, σταθμούς, εὖρος, ἐπῆν, διαβάς, πόλιν, εὐδαίμονα.*

(C) 1. Translate, Virgil, Æneid, Book I.:—

Lucus in urbe fuit mediâ, lætissimus umbræ,
Quo primum, jactati undis et turbine, Pœni
Effodere loco signum, quod regia Juno
Monstrarat, caput acris equi; sic nam fore bello
Egregiam, et facilem victu per sæcula gentem.
Hic templum Junoni ingens SidoniaDido
Condebat, donis opulentum et numine divæ;
Ærea cui gradibus surgebant limina, nexæque
Ære trabes; foribus cardo stridebat aënis.
Hoc primum in luco nova res oblata timorem
Leniit; hic primum Æneas sperare salutem
Ausus, et afflictus melius confidere rebus.
Namque, sub ingenti lustrat dum singula templo,
Reginam opperiens; dum, quæ fortuna sit urbi,
Artificumque manus inter se, operumque laborem
Miratur videt Iliacas ex ordine pugnas,
Bellaque jam fama totum vulgata per orbem,
Atridas, Priamumque, et sævum ambobus Achillem.

2. Parse:—Urbe, lætissimus, jactati, effodere, monstrarat, fore, numine, ære, oblata, trabes.

(D) 1. Translate, Cicero, In Catilinam:—

Magna dis immortalibus habenda est atque huic ipsi Iovi Statori, antiquissimo custodi huius urbus, gratia, quod hanc tam taetram, atm horribilem tamque infestam rei publicae pestem totiens iam effugimus. Non est saepius in uno homine summa salus periclitanda rei publicae. Quam diu mihi consuli designato, Catilina, insidiatus es, non publico me praesidio, sed privata diligentia defendi. Quum proximis comitiis consularibus me consulem in campo et competitores tuos interficere voluisti, compressi conatus tuos nefarios amicorum praesidio et copiis, nullo tumultu publice concitato: denique, quotienscumque me petisti, per me tibi obstiti, quamquam videbam perniciem meam cum magna calamitate rei publicae esse coniunctam.

2. Parse:—dis, habenda est, custodi, rei publicae, urbi, comitiis, voluisti, conatus, publice, conjunctam.

(E) 1. Decline the following nouns:—*δόξα, κριτής, δῶρον, νύξ,* filia, magister, dux, fides.

2. Write down the comparative and superlative of:—κοῦφος, σοφός, ἐχθρός, ἡδύς, *audax, acer, humilis, bonus.*

3. Decline the pronouns :—ἐγώ, σύ, ego, tu, sui.

4. (*a*) Define the terms transitive, intransitive, and deponent, as applied to verbs. (*b*) Give the perfect and supine of:—*lego, mitto, scribo, do.*

5. Write down the 1st Sing. Indic. of the Fut. Act., Aorist Act., and Perf. Act., of:—γράφω, τάσσω, φιλέω.

ENGLISH GRAMMAR.

THURSDAY, SEPTEMBER 18TH:—MORNING, 9 TO 10.30.

FIRST YEAR.

1. To what class of nouns would you refer each of the following :—*book, virtue, senate, summer, snow, Europe?*

2. Gives rules for the use of *who, that* and *which,* respectively. Distinguish between *ye, you* and *thou.*

3. What is a verb? Classify verbs, and explain the terms used in your classification.

4. What parts of speech do Adverbs modify? What kind of Adverb is each of these:—*whither, very, hitherto, always, wisely* ?

5. Correct or justify the following sentences, giving your reasons in either case :

The Parliament have passed a bill.

To me, he appealed ; to me, who is a man of little influence.

If you should go to Quebec, you may see our friend.

Either James or John are to pay.

6. Analyse grammatically,

Would you know whether the tendency of a book is good or evil, examine in what state of mind you lay it down.

SECOND YEAR.

[Question 6 and any two others of the preceding set to be answered together with those which follow.]

1. Give the feminines of sire, fox, lad. Can you explain their formation?

2. Mention a few "irregular" noun-plurals. Is it just to call them "irregular?" What traces of noun-inflection still remain in our language?

3. Exemplify the influences of Latin, Greek, French and Danish on English speech.

4. Give examples of Diminutive and Augmentative noun-suffixes.

5. Classify conjunctions.

ENGLISH HISTORY.

THURSDAY, SEPTEMBER 16TH:—MORNING, 10.30 TO 12.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L,
CHAS. E. MOYSE, B.A.

FIRST YEAR.

1. What races of men have successively occupied England?

2. Make a note or two concerning the Wars of the Roses, The Commonwealth, The Revolution.

3. Say briefly when and how Ireland, Scotland and Wales were first conquered by the English.

4. Mention an important fact, or facts, in connection with Thomas à-Becket, Thomas Wolsey, Sir Walter Raleigh, Titus Oates.

5. What extensive possessions on the Continent of Europe once belonged to England? When and how did she lose them?

6. Can you assign events to the dates 1215, 1666, 1815, 1759.

SECOND YEAR.

[Any *three* questions of the preceding set to be answered together with the following.]

1. Comment on The Heptarchy, The Lollards, The Star Chamber, Ship Money.

2. State what you know concerning The Petition of Right and The Habeas Corpus Act.

3. Explain the terms, compurgation, wergild, feudal, aid.

EXHIBITIONS AND SCHOLARSHIPS.

1879.

FIRST YEAR EXHIBITIONS.

GREEK.

TUESDAY, SEPTEMBER 16TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LLD.

1. Translate:—(A) Homer, Iliad, Bk. VI.:—

Ἀνδρομάχη δέ οἱ ἄγχι παρίστατο δακρυχέουσα,
ἓν τ' ἄρα οἱ φῦ χειρὶ ἔπος τ' ἔφατ' ἐκ τ' ὀνόμαζεν
"Δαιμόνιε, φθίσει σε τὸ σὸν μένος οὐδ' ἐλεαίρεις
παῖδά τε νηπίαχον καὶ ἔμ' ἄμμορον, ἢ τάχα χήρη
σεῦ ἔσομαι· τάχα γάρ σε κατακτανέουσιν Ἀχαιοὶ
πάντες ἐφορμηθέντες· ἐμοὶ δέ κε κέρδιον εἴη
σεῦ ἀφαμαρτούσῃ χθόνα δύμεναι· οὐ γὰρ ἔτ' ἄλλη
ἔσται θαλπωρὴ, ἐπεὶ ἂν σύγε πότμον ἐπίσπῃς,
ἀλλ' ἄχε'· οὐδέ μοί ἐστι πατὴρ καὶ πότνια μήτηρ.
ἦτοι γὰρ πατέρ' ἀμὸν ἀπέκτανε δῖος Ἀχιλλεὺς,
ἐκ δὲ πόλιν πέρσεν Κιλίκων εὐναιετάωσαν,
Θήβην ὑψίπυλον· κατὰ δ' ἔκτανεν Ἠετίωνα,
οὐδέ μιν ἐξενάριξε, σεβάσσατο γὰρ τόγε θυμῷ,
ἀλλ' ἄρα μιν κατέκηε σὺν ἐντεσι δαιδαλέοισιν
ἠδ' ἐπὶ σῆμ' ἔχεεν· περὶ δὲ πτελέας ἐφύτευσαν
νύμφαι ὀρεστιάδες, κοῦραι Διὸς αἰγιόχοιο.
οἱ δέ μοι ἑπτὰ κασίγνητοι ἔσαν ἐν μεγάροισιν,
οἱ μὲν πάντες ἰῷ κίον ἤματι Ἄϊδος εἴσω·
πάντας γὰρ κατέπεφνε ποδάρκης δῖος Ἀχιλλεὺς,
βουσὶν ἐπ' εἰλιπόδεσσι καὶ ἀργεννῇς ὀΐεσσιν.

2 (*a*) In ext. (A) show carefully the grammatical construction of the following words:—*οἱ*, vs. 1. *οἱ*, *χειρί*, vs. 2. *σεῦ*, vs. 7. *χθόνα*,

ib. *Ἄϊδος*, vs. 18. *βουσίν*, vs. 20. (*b*) Point out instances of *tmesis* in the above ext. (*c*) Explain the derivation and meaning of the following words :—*νηπίαχον*, *ἀμμορον*, *τάχα*. *ἀμόν*, *σῆμα*, *ἰς* *ποδάρκης*, *εἰλιπόδεσσι*, *ἀργεννῆς*. (*d*) How does the Homeric use of *τάχα* differ from the Attic ?

3. Parse the following words, giving the principal parts of the verbs, and the *Nom. Sing.* and *Plu.* of the others :—*πῆξε*, *ἔσκεν*, *μίγη*, *ἔγχει*, *ἔθεν*, *κληῖδι*, *ἄλτο*, *δοῦρε*, *ἔσταν*, *φάν*.

4. Translate :—Xenophon, Anabasis, Bk. II. :—

(B) *Ἔπειτα πρῶτον μὲν ἀγορὰν οὐδεὶς παρέξει ἡμῖν οὐδὲ ὅθεν ἐπισιτιούμεθα· αὖθις δὲ ὁ ἡγησόμενος οὐδεὶς ἔσται· καὶ ἅμα ταῦτα ποιούντων ἡμῶν εὐθὺς Ἀριαῖος ἀφεστήξει· ὥστε φίλος ἡμῖν οὐδεὶς λελείψεται, ἀλλὰ καὶ οἱ πρόσθεν ὄντες πολέμιοι ἡμῖν ἔσονται. Ποταμὸς δ' εἰ μέν τις καὶ ἄλλος ἀρα ἡμῖν ἐστι διαβατέος οὐκ οἶδα· τὸν δ' οὖν Εὐφράτην οἰδαμεν ὅτι ἀδύνατον διαβῆναι κωλυόντων πολεμίων. οὐ μὲν δή, ἂν μάχεσθαί γε δέῃ, ἱππεῖς εἰσιν ἡμῖν ξύμμαχοι, τῶν δὲ πολεμίων ἱππεῖς εἰσιν οἱ πλεῖστοι καὶ πλείστου ἄξιοι· ὥστε νικῶντες μὲν τίνα ἂν ἀποκτείναιμεν; ἡττωμένων δὲ οὐδένα οἷόν τε σωθῆναι*

(C) *Οἱ μὲν δὴ στρατηγοὶ οὕτω ληφθέντες ἀνήχθησαν ὡς βασιλέα, καὶ ἀποτμηθέντες τὰς κεφαλὰς ἐτελεύτησαν, εἷς μὲν αὐτῶν Κλέαρχος ὁμολογουμένως ἐκ πάντων τῶν ἐμπείρως αὐτοῦ ἐχόντων δόξας γενέσθαι ἀνὴρ καὶ πολεμικὸς καὶ φιλοπόλεμος ἐσχάτως. Καὶ γὰρ δὴ ἕως μὲν πόλεμος ἦν τοῖς Δακεδαιμονίοις πρὸς τοὺς Ἀθηναίους, παρέμενεν· ἐπεὶ δέ εἰρήνη ἐγένετο, πείσας τὴν αὐτοῦ πόλιν ὡς οἱ Θρᾷκες ἀδικοῦσι τοὺς Ἕλληνας, καὶ διαπραξάμενος ὡς ἐδύνατο παρὰ τῶν ἐφόρων ἐξέπλει ὡς πολεμήσων τοῖς ὑπὲρ Χερρονήσου καὶ Περίνθου Θρᾳξίν. Ἐπεὶ δὲ μεταγνόντες πως οἱ ἔφοροι ἤδη ἔξω ὄντος αὐτοῦ ἀποστρέφειν αὐτὸν ἐπειρῶντο ἐξ Ἰσθμοῦ, ἐνταῦθα οὐκέτι πείθεται, ἀλλ' ᾤχετο πλέων εἰς Ἑλλήσποντον.*

5. (*a*) Translate the following single passages, explaining any peculiarity in construction :—(*a*) *Ἐνταῦθα ἦν Κλέαρχον καταμαθεῖν.* (*b*) *σκοταῖοι προσιόντες.* (*c*) *ἠυλιζόντο περὶ πλήθουσαν ἀγοραν.* (*d*) *Ἄλλος ἄλλα λέγει.* (*b*) Explain the construction of the following sentences : —(*a*) *Ἀποτμηθέντες τὰς κεφαλὰς.* (*b*) *ὡς πολεμήσων.* (*c*) *ὡς οἱ Θρᾷκες ἀδικοῦσι τοὺς Ἕλληνας.*

6. Translate :—(D) Demosthenes, Philippic I. :—

Ὡς μὲν οὖν δεῖ τὰ προσήκοντα ποιεῖν ἐθέλοντας ὑπάρχειν ἅπαντας ἑτοίμως, ὡς ἐγνωκότων ὑμῶν καὶ πεπεισμένων, παύομαι λέγων· τὸν δὲ τρόπον τῆς παρασκευῆς ἣν ἀπαλλάξαι ἂν τῶν τοιούτων πραγμάτων ὑμᾶς οἴομαι, καὶ τὸ πλῆθος ὅσον, καὶ πόρους οὕστινας χρημάτων, καὶ τἄλλα ὡς ἂν μοι βέλτιστα καὶ τάχιστα δοκεῖ παρασκευασθῆναι, καὶ δὴ περάσομαι λέγειν, δεηθεὶς ὑμῶν, ὦ

ἀνδρες 'Αθηναῖοι, τοσοῦτον. ἐπειδὰν ἅπαντα ἀκούσητε, κρίνατε, μὴ πρότερον προλαμβάνετε· μηδ' ἂν ἐξ ἀρχῆς δοκῶ τινι καινὴν παρασκευὴν λέγειν, ἀναβάλλειν με τὰ πράγματα ἡγείσθω. οὐ γὰρ οἱ ταχὺ καὶ τήμερον εἰπόντες μάλιστα εἰς δέον λέγουσιν· οὐ γὰρ ἂν τά γε ἤδη γεγενημένα τῇ νυνὶ βοηθείᾳ κωλῦσαι δυνηθείημεν· ἀλλ' ὃς ἂν δείξῃ τίς πορισθεῖσα παρασκευὴ καὶ πόση καὶ πόθεν διαμεῖναι δυνήσεται, ἕως ἂν ἢ διαλυσώμεθα πεισθέντες τὸν πόλεμον ἢ περιγενώμεθα τῶν ἐχθρῶν· οὕτω γὰρ οὐκέτι τοῦ λοιποῦ πάσχοιμεν ἂν κακῶς.

7. (*a*) Express the force of *ὡς* with the Gen. in *ὡς ἐγνωκότων ὑμῶν*, and also of the particles *καὶ δή*. (*b*) Give the etymology of *δή*. (*c*) *βέλτιστα καὶ τάχιστα*:—What case and why?

8. Whence the term *Philippics* as applied to these orations? State what you know of the events that led to their delivery by Demosthenes.

LATIN.

TUESDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....REV. GEORGE CORNISH, LL.D

1. Translate:—(A) Cicero, Pro Archia:—

Neque enim quisquam est tam aversus a Musis qui non mandari versibus aeternum suorum laborum facile praeconium patiatur. Themistoclem illum, summum Athenis virum, dixisse aiunt, quum ex eo quaereretur, *quod acroama aut cuius vocem libentissime audiret, eius, a quo sua virtus optime praedicaretur*. Itaque ille Marius item eximie L. Plotium dilexit, cuius ingenio putabat ea, quae gesserat, posse celebrari. Mithridaticum vero bellum, magnum atque difficile et in multa varietate terra marique versatum, totum ab hoc expressum est: qui libri non modo L. Lucullum, fortissimum et clarissimum virum, verum etiam populi Romani nomen illustrant. Populus enim Romanus aperuit Lucullo imperante Pontum et regiis quondam opibus et ipsa natura egregie vallatum: populi Romani exercitus eodem duce non maxima manu innumerabiles Armeniorum copias fudit: populi Romani laus est urbem amicissimam Cyzicenorum eiusdem consilio ex omni impetu regio atque totius belli ore ac faucibus ereptam esse atque servatam.

2. Give a short account of Archias, and of the circumstances which led to the delivery of this oration.

3. (*a*) Explain briefly the following historical or biographical references, giving dates:—(1) Ille Marius. (2) Mithridaticum bellum. (3) Octavios. (4) Africano superiori. (5) Rudinum hominem. (*b*) Translate into good English the following extt., adding short explanatory notes on words in Italics:—(1) Omnes artes quae ad *humanitatem* pertinent. (2) Cum *res agatur* apud *praetorem* et apud severissimos *judices*. (3) Sic ejus

adventus celebrabantur. (4) Audiebatur a M. Aemilio; a L. Crasso colebatur. (5) Delectant domi, non impediunt foris, pernoctant nobiscum, peregrinantur, rusticantur.

4. Translate:—(B) Horace, Odes, Bk. I:—

(*a*) Gaudentem patrios findere sarculo
Agros *Attalicis conditionibus*
Nunquam dimoveas, ut trabe *Cypria*
Myrtoum pavidus nauta secet *mare*.
Luctantem *Icariis fluctibus Africum*
Mercator metuens otium et oppidi
Laudat rura sui; mox reficit rates
Quassas indocilis pauperiem pati.
Est qui nec veteris pocula *Massici*
Nec partem solido demere de die
Spernit, nunc viridi membra sub arbuto
Stratus, nunc ad aquae lene caput sacrae.
Multos castra juvant et *lituo tubae*
Permixtus sonitus bellaque matribus
Detestata. Manet sub Jove frigido
Venator tenerae conjugis immemor,
Seu visa est catulis cerva fidelibus,
Seu rupit teretes Marsus aper plagas.

(*b*) Dianam tenerae dicite virgines,
Intonsum, pueri, dicite Cynthium
Latonamque supremo
Dilectam penitus Jovi.
Vos laetam fluviis et nemorum coma,
Quaecunque aut gelido prominet Algido
Nigris aut Erymanthi
Silvis aut viridis Cragi;
Vos Tempe totidem tollite laudibus
Natalemque, mares, Delon Apollinis,
Insignemque pharetra
Fraternaque humerum lyra.
Hic bellum lacrimosum, hic miseram famem
Pestemque a populo et principe Caesare in
Persas atque Britannos
Vestra motus aget prece.

5. (*a*) Scan the first two vss. of ext. (*a*) and the first stanza of ext. (*b*), naming the metres severally used. (*b*) Write explanatory notes on the words in italics in ext. (*a*) (*c*) *Tergeminis* tollere *honoribus*. *Proprio* condidit *horreo*. *Indocilis* pauperiem *pati*. *Dis* miscent *superis*. Insignem *pharetra*:—Explain the grammatical construction of these extt. severally.

6. Translate:—(C) Ovid, Fasti:—

Finierat monitus; placidis ita rursus, ut ante,
Clavigerum verbis alloquor ipse deum:
Multa quidem didici: sed cur navalis in aere
Altera signata est, altera forma biceps?
Noscere me duplici posses in imagine, dixit,
Ni vetus ipsa dies extenuaret opus.
Causa ratis superest: Tuscum rate venit in amnem
Ante pererrato falcifer orbe deus.
Hac ego Saturnum memini tellure receptum;
Caelitibus regnis ab Jove pulsus erat.
Inde diu genti mansit Saturnia nomen;
Dicta quoque est Latium terra latente deo.
At bona posteritas puppim formavit in aere,
Hospitis adventum testificata dei.
Ipse solum colui, cujus placidissima laevum
Radit arenosi Tibridis unda latus.

7. (*a*) Give a short account of the Fasti of Ovid. (*b*) Give the etymology and the meaning of the following terms:—Dies *fasti*, *nefasti*· *Kalendae*. *Nonae*. *Idus*.

8. Derive and translate the words:—Acroama, tropæa, simulacra, vinculum, exsilium, apricus, contagia, tegmen, nobilis, tergeminis, teretes.

9. Parse, giving their principal parts:—edite, stratus, visere, retortis, incubuit, mirabere, gesserit, intactae, affatus, severis. (Give different meanings of the last, according to differences of quantity.)

GRAMMAR AND COMPOSITION.

TUESDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. (*a*) Distinguish between *inflected* and *non-inflected* words. (*b*) Define the terms *Root*, *Stem*, *Prefix*, *Suffix*, *Case*. (*c*) Distinguish between *derived and cognate* words.

2. (*a*) Decline the following nouns and adjectives:—*κάλλος*, *καλός πολίτης*, *ὄρνις*, *ἐλέφας*, *μέγας*. (*b*) Write down the Comparative and Superlative of:—*σοφός*, *ἡδύς*, *κοῦφος*, *πολύς*. (*c*) Give the *Genitive Singular* of the following pronouns:—*ἐγώ*, *αὐτός*, *οὗτος*, *τίς*, and *ὅστις*.

3. (*a*) Name the *principal* and *historical* Tenses. (*b*) Conjugate the Present and Imperfect Indicative Active of *καλέω*; the Optative and Subjunctive Aorist Active of the same; and likewise the Aorist

and Future Passive and Middle of *βουλεύω*. (*c*) Distinguish between *ἀπόφηναι*, *ἀποφῆναι*, and *ἀποφήναι*.

4. Translate into Greek :—(1) The two boys were pursuing the horse. (2) The half of the city was taken. (3) They continued fighting all day. (4) These things were done in the reign of Cyrus.

5. (*a*) What nouns of the Third Declension in Latin have the *Gen. Plu.* in— *ium* ? (*b*) Decline the following nous :—*anima, judex, apis, domus, respublica.* (*c*) Give the rule for the gender of *dies.*

6. (*a*) How many classes of Adjectives are there in Latin? (*b*) Decline celer, gravis, par, felix. (*c*) Compare acer, gracillis, levis, malevolus, senex. (*d*) Distinguish between hic, ille, iste, and is : idem and ĭdem : hic and hicce : quis, quae, quid, and qui, quae, quod. With what pronuns is cum an enclitic ?

7. Inflect the Pres. Subj. Pass. of *juvo* ; the Perf. Subj. Act of *cedo ;* and the Imp. Subj. of *volo* ; and mark the quantity of the *penultimate* of each form.

8. Translate into Latin :—

(1). Cæsar asked them to send envoys to Rome to the senate. (2) The vanquished foe sent ambassadors to the victorious general to sue for peace, but he would not grant it. (3) He thereatened his own brother with death unless he obeyed him. (4) With you for our leader, they cried out, we are all prepared to conquer or die. (5) I cannot help being afraid.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 17TH :—MORNING, 9 TO 12.

Examiner,..... ALEXANDER JOHNSON, LL.D

1. If from the point of contact of a tangent to a circle a chord be drawn, the angles which it makes with the tangent are equal to the angles in the alternate segments of the circle.

a. If DE be drawn parallel to the base BC of a triangle ABC, prove that the circles described about the triangles ABC and ADE have a common tangent.

2. Inscribe an equilateral and equiangular quindecagon in a given circle.

3. If a straight line touch a circle, the radius drawn to the point of contact is perpendicular to it.

a. Draw a tangent to a given circle which shall be parallel to a given straight line.

4. On the same straight line and on the same side of it there cannot be two similar segments of circles which do not coincide.

5. If a right line be divided into any two parts, the square of the sum of the whole line and one part is equal to four times the rectangle under the whole line and that part together with the square of the other part.

6. The sum of the squares of two lines exceeds the square of their difference by twice the rectangle under them.

7. The diagonals of a parallellogram bisect each other.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. The sum of an infinite geometric series is 2 and the second term is $-\frac{3}{2}$; find the series.

2. The difference of the Arith. and Harm. means between two numbers is $1\frac{1}{3}$; find the numbers, one being four times the other.

3. Insert 9 Arith. means between 3 and 9.

4. Solve the following equations:—

a. $\left.\begin{matrix} x^3 + y^3 = 189 \\ x^2 y + x y^2 = 180 \end{matrix}\right\}$

b. $\dfrac{x+2}{x-1} - \dfrac{4-x}{2x} = 2\frac{1}{3}$

c. $x + 2y = 7,\ y + 2z = 2,\ 3x + 2y = z - 1$

d. $\dfrac{x}{a+x} = \dfrac{a+x}{x} - \dfrac{2a-b}{2x}$

5. Find three numbers A, B, C such that A with half of B, B with a third of C, and C with a fourth of A, may each be 1,000.

6. A man could reap a field by himself in 20 hours, but with his son's help for 6 hours he could do it in 16 hrs; how long would the son be in reaping the field by himself?

7. Find the continued producof

$3\sqrt{8},\ 2\sqrt[3]{6},$ and $3\sqrt[4]{54}.$

8 A person buys 300 shares of bank stock at 106 and subsequently 60

more at 95¾, if he sell out at 91 three months after the payment of a dividend, how much does he lose, the par value of each share being 40 dollars, and interest being reckoned at 6 per cent. per annum?

9. What sum of money will amount to $297 in 4 years at 8 per cent. simple interest?

10. The carriage of 1 cwt. 3 qrs. 21 lbs. for 52¼ miles costs 17s. 5d.; what will be charged for 2½ tons for 46½ miles, the cwt. containing 112 lbs?

11. Find the sum of .125˙, 4.16·3˙, and 9.457˙ correct to five places of decimals.

12. Reduce 126 yds. 2 ft. 6 in. to the fraction of a mile.

ENGLISH GRAMMAR.

THURSDAY, SEPTEMBER 18TH:—MORNING, 9 TO 12.

Examiners, ... { VEN. ARCHDEACON LEACH, D.C.L.
CHAS. E. MOYSE, B.A.

1. In what way does the English language distinguish Gender?

2. Give the plurals of fish, brother, die, datum, bandit.

3. What is noteworthy regarding *frail* and *fragile*; *sure* and *secure*; *lesson* and *lection?*

4. What is a Hybrid? Give examples.

5. How is the plural of Compound nouns formed? Cite six Compound adjectives.

6. Tell, as clearly as you can, what modifications of meaning the inseparable particles "a," "b," "mis," and "un" produce. Derive the suffixes ment, ism, esque.

7. Make a note or two on the formation of gospel, runagate, sparrow-grass.

8. Mention the Indefinite and the Reflexive Pronouns.

9. "Well, I would all men would look to their duty, as God hath called them, and then we should have a flourishing Christian common-weal."

(*a*) Underline the words of Classic origin in the above sentence.

(*b*) Denote the words which undergo inflection.

(*c*) Change all the verbs to the corresponding Passive forms.

10. Explain the terms, extension, copula, predicate. Analyse grammatically the extract quoted in question 9.

11. Explain: rhythm, cæsura, accent, triplet, rime, assonance.

SECOND YEAR EXHIBITIONS.

GREEK.

TUESDAY, SEPTEMBER 16TH:—MORNING 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate :—(A) Homer, Odyssey XII :—

(*a*) „Ὦ φίλοι, οὐ γὰρ χρὴ ἕνα ἰδμεναι οὐδὲ δύ' οἵους
θέσφαθ' ἃ μοι Κίρκη μυθήσατο, δῖα θεάων·
ἀλλ' ἐρέω μὲν ἐγών, ἵνα εἰδότες ἢ κε θάνωμεν
ἢ κεν ἀλευάμενοι θάνατον καὶ κῆρα φύγοιμεν.
Σειρήνων μὲν πρῶτον ἀνώγει θεσπεσιάων
φθόγγον ἀλεύασθαι καὶ λειμῶν' ἀνθεμόεντα.
οἶον ἐμ' ἠνώγειν ὅπ' ἀκουέμεν· ἀλλά με δεσμὸς
δήσατ' ἐν ἀργαλέῳ, ὄφρ' ἔμπεδον αὐτόθι μίμνω,
ὀρθὸν ἐν ἱστοπέδῃ, ἐκ δ' αὐτοῦ πείρατ' ἀνήφθω.
εἰ δέ κε λίσσωμαι ὑμέας λῦσαί τε κελεύω,
ὑμεῖς δὲ πλεόνεσσι τότ' ἐν δεσμοῖσι πιέζειν."

(*b*) Ἔνθ' ἤτοι Ζέφυρος μὲν ἐπαύσατο λαίλαπι θύων,
ἦλθε δ' ἐπὶ Νότος ὦκα, φέρων ἐμῷ ἄλγεα θυμῷ,
ὄφρ' ἔτι τὴν ὀλοὴν ἀναμετρήσαιμι Χάρυβδιν.
παννύχιος φερόμην, ἅμα δ' ἠελίῳ ἀνιόντι
ἦλθον ἐπὶ Σκύλλης σκόπελον δεινήν τε Χάρυβδιν.
ἡ μὲν ἀνερροιβδησε θαλάσσης ἁλμυρὸν ὕδωρ·
αὐτὰρ ἐγὼ ποτὶ μακρὸν ἐρινεὸν ὑψόσ' ἀερθεὶς
τῷ προσφὺς ἐχόμην ὡς νυκτερίς· οὐδέ πη εἶχον
οὔτε στηρίξαι ποσὶν ἔμπεδον οὔτ' ἐπιβῆναι·
ῥίζαι γὰρ ἑκὰς εἶχον, ἀπήωροι δ' ἔσαν ὄζοι,
μακροί τε μεγάλοι τε, κατεσκίαον δὲ Χάρυβδιν.

2. (*a*) Note the peculiar use of ἵνα κε in ext. (*a*), and state what its actual force probably is. (*b*) Distinguish between the use of the moods in θάνωμεν and φύγοιμεν. (*c*) Explain the phrase δῖα θεάων.

3. (*a*) Point out the *Epic* forms that occur in the above extt., and give their equivalents in the Attic dialect. (*b*) Note also the words that had the *Digamma*, and adduce cognate forms in Latln. (*c*) Note peculiarities in the following vs. :—

ἐπίτονος βέβλητο βοὸς ῥινοῖο τετευχώς. By what name was such a verse designated?

4. Translate :—(B) Xenophon, Hellenics, Bk. II. :—

(*a*) Τῷ δ' ἐπιόντι ἔτει [ἐπὶ Ἀρχύτα μὲν ἐφορεύοντος, ἄρχοντος δ' ἐν Ἀθήναις

'Αλεξίου.] Λύσανδρος ἀφικόμενος εἰς Ἔφεσον μετεπέμψατο Ἐτεόνικον ἐκ Χίου σὺν ταῖς ναυσί, καὶ τὰς ἄλλας πάσας συνήθροισεν, εἰ πού τις ἦν, καὶ ταύτας τ' ἐπεσκεύαζε καὶ ἄλλας ἐν 'Αντάνδρῳ ἐναυπηγεῖτο. ἐλθὼν δὲ παρὰ Κυρον χρήματα ἤτει· ὁ δ' αὐτῷ εἶπεν ὅτι τὰ μὲν παρὰ βασιλέως ἀνηλωμένα εἴη, καὶ ἔτι πλείω πολλῷ, δεικνύων ὅσα ἕκαστος τῶν ναυάρχων ἔχοι, ὅμως δ' ἔδωκε. λαβὼν δὲ ὁ Λύσανδρος τἀργύριον, ἐπὶ τὰς τριήρεις τριηράρχους ἐπέστησε καὶ τοῖς ναύταις τὸν ὀφειλόμενον μισθὸν ἀπέδωκε. παρεσκενάζοντο δὲ καὶ οἱ τῶν 'Αθηναίων στρατηγοὶ πρὸς τὸ ναυτικὸν ἐν τῇ Σάμῳ.

(*b*) Ὦ ἄνδρες βουλευταί, εἰ μέν τις ὑμῶν νομίζει πλείονας τοῦ καιροῦ ἀποθνησκειν, ἐννοησάτω ὅτι ὅπου πολιτεῖαι μεθίστανται πανταχοῦ ταῦτα γιγνεται· πλείστους δὲ ἀνάγκη ἐνθάδε πολεμίους εἶναι τοῖς εἰς ὀλιγαρχίαν μεθιστᾶσι διά τε τὸ πολυανθρωποτάτην τῶν Ἑλληνίδων τὴν πόλιν εἶναι καὶ διὰ τὸ πλειστον χρόνον ἐν ἐλευθερίᾳ τὸν δῆμον τεθράφθαι. ἡμεῖς δὲ γνόντες μὲν τοῖς οἵοις ἡμῖν τε καὶ ὑμῖν χαλεπὴν πολιτείαν εἶναι δημοκρατίαν, γνόντες δὲ ὅτι Λακεδαιμονίοις τοῖς περισώσασιν ἡμᾶς ὁ μὲν δῆμος οὔποτ' ἂν φίλος γένοιτο, οἱ δὲ βέλτιστοι ἀεὶ ἂν πιστοὶ διατελοῖεν, διὰ ταῦτα σὺν τῇ Λακεδαιμονίων γνώμῃ τήνδε τὴν πολιτείαν καθίσταμεν.

5. (*a*) Name the date of the events referred to in ext. (*a*). (*b*) 'Αρχύτα:—What case, and what dialect? (*c*) Why is the clause bracketed here? (*d*) By whom was ext. (*b*) spoken, and what was his character and his end? (*e*) τοῖς οἵοις ἡμῖν τε καὶ ὑμῖν:—Show the construction, and supply the ellipsis.

6. Give as accurately as you can the meaning and the etymology of the following words:—*παράσπονδον, σκευοφόρων, ἐπιστολέα, ἀποκοττα-βίσαντα, μετοίκων, ἀτίμους, ἐπιτίμους, ἡ Πάραλος, τὰ παραβλήματα, τὸ ξυνθημα.*

7. Translate:—(C) Herodotus, Bk. I.:—

Ὁ δὲ εἶπε· Ὦ Κροῖσε, ἐπιστάμενόν με τὸ θεῖον πᾶν ἐὸν φθονερόν τε καὶ ταραχῶδες ἐπειρωτᾷς ἀνθρωπηίων πρηγμάτων πέρι; ἐν γὰρ τῷ μακρῷ χρόνῳ πολλὰ μέν ἐστι ἰδέειν τὰ μή τις ἐθέλει, πολλὰ δὲ καὶ παθέειν. ἐς γὰρ ἑβδομήκοντα ἔτεα οὖρον τῆς ζόης ἀνθρώπῳ προτιθημι· οὗτοι ἐόντες ἐνιαυτοὶ ἑβδομήκοντα παρέχονται ἡμέρας δισκοσίας καὶ πεντακισχιλίας καὶ δισμυριας, ἐμβολίμου μηνὸς μὴ γενομένου· εἰ δὲ δὴ ἐθελήσει τοὔτεροῦν τῶν ἐτέων μηνὶ μακρότερον γίνεσθαι, ἵνα δὴ αἱ ὧραι συμβαίνωσι παραγινόμεναι ἐς τὸ δέον, μῆνες μὲν παρὰ τὰ ἑβδομήκοντα ἔτεα οἱ ἐμβόλιμοι γίνονται τριήκοντα πέντε, ἡμέραι δὲ ἐκ τῶν μηνῶν τούτων χίλιαι πεντήκοντα. τουτέων τῶν ἁπασέων ἡμερέων τῶν ἐς τὰ ἑβδομήκοντα ἔτεα ἐουσέων πεντήκοντα καὶ δηκοσίων καὶ ἑξακισχιλιέων καὶ δισμυριέων, ἡ ἑτέρη αὐτέων τῇ ἑτέρῃ ἡμέρῃ τὸ παράπαν οὐδὲν ὁμοῖον προσάγει πρῆγμα. οὕτω ὦν, ὦ Κροῖσε, πᾶν ἐστι ἀνθρωπος συμφορή. ἐμοὶ δὲ σὺ καὶ πλουτέειν μὲν μέγα φαίνεαι καὶ βασιλεὺς εἶναι πολλῶν

ἀνθρώπων· ἐκεῖνο δὲ τὸ εἰρεό με, οὔκω σε ἐγὼ λέγω, πρὶν ἂν τελευτήσαντα καλῶς τὸν αἰῶνα πύθωμαι. οὐ γάρ τοι ὁ μέγα πλούσιος μᾶλλον τοῦ ἐπ' ἡμέρην ἔχοντος ὀλβιώτερός ἐστι εἰ μὴ οἱ τύχη ἐπίσποιτο, πάντα καλὰ ἔχοντα τελευτῆσαι εὖ τὸν βίον.

8. (*a*) *εὐδαιμονίης δευτερεῖα*:—Explain the use of the *Genitive*. (*b*) *ἐς γάρ ἑβδομήκοντα ἔτεα. παρὰ τὰ ἑβδομήκοντα ἔτεα*:—Give the exact force of the prepositions. (*c*) *πᾶν ἐστι ἀνθρωπος συμφορή*:—Explain grammatically. (*d*) *εἰ μή οἱ* * * * *ἔχοντα*:—Why the *Acc.*, and not *Dat.* to agree with *οἱ*? (*e*) Point out the chronological difficulties connected with this alleged visit of Solon to Crœsus.

9. Parse carefully the the following verbs, naming their principal parts, and assign them to their respective dialects:—*ἄραι, χρῷτο, ἐροῦντας, εἶα, συλλεγῶσιν, ἀπίεναι, ἀνίεναι, πλῆτο, ἀη, εἴρεο, ἀπολέει, ποιήσειαν.*

LATIN.

TUESDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. Translate, Virgil, Æneid, VI.:—

(A) Phoebe, gravis Troiae semper miserate labores,
Dardana qui Paridis direxti tela manusque
Corpus in Aeacidae, magnas obeuntia terras
Tot maria intravi *duce te* penitusque repostas
Massylum gentis praetentaque *Syrtibus* arva
Iam tandem Italiae *fugientis* prendimus oras;
Hac Troiana tenus fuerit Fortuna secuta.
Vos quoque Pergameae iam fas est parcere genti,
Dique deaeque omnes, quibus obstitit Ilium et ingens
Gloria Dardaniae. Tuque, o sanctissima vates,
Praescia *venturi*, da, non indebita posco
Regna *meis fatis*, Latio considere Teucros
Errantisque deos agitataque numina Troiae.

(B) Illae autem, paribus quas fulgere cernis in armis,
Concordes animae nunc et dum nocte premuntur,
Heu quantum inter se bellum, si lumina vitae
Attigerint, quantas acies stragemque ciebunt!
Aggeribus socer Alpinis atque arce Monoeci
Descendens, gener adversis instructus Eois.
Ne pueritne an ta *animis* adsuescite bella,
Neu patriae validas in viscera vertite *viris*.

2. Explain the historical reference of ext. (B), and give the geographical position, with the modern name, of the place mentioned.

3. (*a*) Name the cases of the several words in italics in the above extracts, giving reasons for your statements. (*b*) What class of nouns form their *Acc. Plu.* properly in—*is?* Show the quantity of this suffix, and explain its formation.

4. Translate, Horace, Odes, Bk. III. :—

(C) ANGUSTAM amice pauperiem pati
Robustus *acri militia* puer
Condiscat, et Parthos feroces
Vexet eques metuendus *hasta*,
Vitamque sub divo et trepidis agat
In rebus. Illum ex moenibus hosticis
Matrona bellantis tyranni
Prospiciens et adulta virgo
Suspiret, eheu, ne rudis *agminum*
Sponsus lacessat regius asperum
Tactu leonem, quem cruenta
Per medias rapit ira caedes.
Dulce et decorum est pro patria mori
Mors et fugacem persequitur virum,
Nec parcit imbellis juventae
Poplitibus timidoque tergo.
Virtus *repulsae* nescia *sordidae*
Intaminatis fulget *honoribus*,
Nec sumit aut ponit secures
Arbitrio popularis aurae.

5. (*a*) Show the construction of the words in italics in ext. (C), and point out the force and meaning of the cases severally used. (*b*) Explain briefly the following references used by Horace in this Book. (1) Siculae dapes. (2) Descendat in Campum petitor. (3) Redemptor cum famulis. (4) Achaemenium costum. (5) Anciliorum oblitus. (6) Martiis Kalendis. (*c*) Show by such references as you can adduce the proximate date of Book III., of the Odes.

6. Translate, Cicero, Select Letters :—

(D) Puteolis magnus est rumor Ptolemaeum esse in regno: si quid habes certius, velim scire. Ego hic pascor bibliotheca Fausti; fortasse tu putaras, his rebus Puteolanis et Lucrinensibus: ne ista quidem esent. Sed mehercule ut a ceteris oblectationibus deseror voluptatum propter rem publicam, sic litteris sustentor et recreor maloque in illa tua sedecula, quam habes sub imagine Aristotelis, sedere quam in istorum sella curuli tecumque apud te ambulare quam cum eo, quocum video esse ambulandum. Sed de illa ambulatione fors viderit aut si qui est, qui curet, deus. Nostram

ambulationem et Laconicum eaque, quae Cyrea sint, velim, cum poteris, invisas et urgeas Philotimum, [ut properet,] ut possim tibi aliquid in eo genere respondere. Pompeius in Cumanum Parilibus venit; misit ad me statim, qui salutem nuntiaret: ad eum postridie mane vadebam, cum haec scripsi.

7. (*a*) In what year was ext. (D) written, and amid what public events? (*b*) Explain the following personal references: -- (1) Ptolemaeum. (2) Fausti. (3) In istorum sella curuli. (4) Philotimum. (*c*) Explain the following: — (1) Rebus Puteolanis et Lucrinensibus. (2) Nostram ambulationem et Laconicum. (3) Cumanum. (4) Parilibus.

8. Translate, Livy, Bk. IX. :—

(E) Adde, quod Romanis ad manum domi supplementum esset, Alexandro, quod postea Hannibali accidit, alieno in agro bellanti exercitus consenuisset. Arma clupeus sarisaeque illis; Romano scutum, maius corpori tegumentum, et pilum, haud paulo quam hasta vehementius ictu missuque telum. statarius uterque miles ordines servans: sed illa phalanx immobilis et unius generis, Romana acies distinctior, ex pluribus partibus constans, facilis partienti, quacumque opus esset, facilis iungenti. iam in opere quis par Romano miles? quis ad tolerandum laborem melior? uno proelio victus Alexander bello victus esset: Romanum, quem Caudium, quem Cannae non fregerunt, quae fregisset acies? ne ille saepe, etiam si prima prospere evenissent, Persas et Indos et inbellem Asiam quaesisset, et cum feminis sibi bellum fuisse dixisset, quod Epiri regem Alexandrum mortifero vulnere ictum dixisse ferunt, sortem bellorum in Asia gestorum ab hoc ipso iuvene cum sua conferentem.

9. (*a*) Explain the use of the Subjunctive in :—Supplementum *esset*. Opus *esset*. Quae *fregisset*. *Evenissent*, * * *quaesisset*. (*b*) Describe :— Clupeus, sarisa, scutum, pilum, phalanx.

HISTORY AND GRAMMAR.

WEDNESDAY, SEPTEMBER 17TH :—AFTERNOON, 3 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Name the most noticeable features of the condition of society in the earliest times of Greece as set forth in the Homeric Poems.

2. What states successively held the supremacy in the affairs of Greece in historic times? What causes led to their successive decline? When were they absorbed into the Roman empire?

3. Give a general account of the political condition of the *Plebs* at Rome during the early period of the Commonwealth, and point out the steps by which their condition was ameliorated.

(B) 1. (*a*) Name the *Primary* and the *Historic* tenses. Why are they so designated? (*b*) Mention (1st Sing., and Ind. Act.) the Fut. of ἄγνυμι: the Aor. I. of στέλλω: the Perf. of ἵημι: the Perf. II. of πείθω: the Aor. II. of τίκτω.

2. Illustrate by examples the use of the *Objective* and the *Subjective Genitive;* the *Cognate Accusative;* and the *Dativus Ethicus.*

3. Parse the following verbs, and give their principal parts:—lautus, verebare, pareret, adamaris, arcessita, lusissemus, advoluta, adessemus, exequenda, cesserit.

(C) Translate into Greek:—

(1) The general of the Persians led his army into the country of the Athenians, and laid waste the greater part of it. (2) These events happened while Cyrus was king of the Persians. (3) The boy told the philosopher that he had come to him in order to be taught virtue and wisdom. (4) He said that if he had had anything, he would have given it.

Translate into Latin:—

Jugurtha was taken prisoner. The great traitor fell by the treachery of his nearest relatives. Lucius Sulla brought the crafty and restless African in chains along with his children to the Roman headquarters; and the war, which had lasted for seven years, was at an end. The victory was associated with the name of Marius. King Jugurtha in royal robes, and in chains, along with his two sons, preceded the triumphal chariot of the victor, when he entered Rome on January 1, 650. By his orders the son of the desert perished a few days afterwards in the subterranean city prison, the old Tullianum, at the capitol.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. In any right-angled triangle, any rectilinear figure described on the hypotenuse is equal to the sum of the similar and similarly described figures on the sides containing the right angle.

2. Inscribe a regular hexagon in a circle.

3. The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

4. In a plane triangle the sum of the sides is to their difference as the tangent of half the sum of the base angles is to the tangent of half their difference.

5. Prove $tan\ (A - B) = \dfrac{tan\ A - tan\ B}{1 + tan\ A\ tan\ B}$

6. Given $sin\ A = \frac{1}{2}$, find $cot\ A$.

7. Prove $cos\ (A - B) = cos\ A\ cos\ B + sin\ A\ sin\ B$.

8. Solve the equations:

$$a + x + \sqrt{a^2 + bx + x^2} = b$$
$$a\,x^2 + b\,x + c = 0$$

9. Solve the equations

$$\frac{(2\,x + 3)\,x}{2\,x + 1} + \frac{1}{3x} = x + 1.$$
$$\left.\begin{aligned} \tfrac{1}{6}\,(2\,x + 3\,y) + \tfrac{1}{3}\,x &= 8 \\ \tfrac{1}{2}\,(7\,y - 3\,x) - y &= 11 \end{aligned}\right\}$$

10. What is the first hour after six o'clock at which the two hands of a watch are directly opposite.

11. Prove that a surd cannot equal the sum or difference of a rational quantity and a surd.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 17TH :—AFTERNOON 2 TO 5.

Examiner,..... .....ALEXANDER JOHNSON, LL.D.

1. Given the base and the difference of the sides of a triangle, the polar of the vertex with respect to one extremity of the base as origin always touches a fixed circle.

2. A common tangent to any two circles is divided harmonically by any other circle having the same radical axis with the two given circles.

3. The distances of any two points from the centre of a given circle are to one another as the distance of each point from the polar of the other.

4. Given a triangle, describe the circle with respect to which the triangle is self-conjugate.

5. Given four points A, B, A′, B′, in a straight line; find the locus of a point at which A B and B′ A′ shall subtend equal angles.

6. The straight lines joining the opposite angles of any hexagon described about a circle pass through the same point.

7. Two vertices of a triangle move on fixed straight lines, and the three sides pass through three fixed points which lie on a straight line; find the locus of the third vertex.

8. Through a given point within a given angle, draw a straight line cutting the legs of the angle, so that it shall be divided at the point in a given ratio.

9. The roots of the following equation are in arithmetical progression find them:—

$$x^3 - 6x^2 + 11x - 6 = 0.$$

10. Diminish by 3 the roots of the equation

$$x^4 - 12x^3 + 49x^2 - 78x + 40 = 0.$$

and solve the resulting biquadratic.

11. Determine by Sturm's Theorem the situation of the real roots of the equation

$$x^4 - 4x^3 - 3x + 23 = 0.$$

12. The equation

$$x^5 - x^4 - 2x^3 + 2x^2 + x - 1 = 0$$

has equal roots, find them.

13. Transform $x^4 - 12x^2 + 12x - 3 = 0$ into an equation, whose roots shall be the reciprocals of those of the given equation.

14. How many different words may be made of all the letters of the word *division*?

ENGLISH GRAMMAR.

THURSDAY, SEPTEMBER 18TH:—MORNING 9 TO 12.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L.
CHAS. E. MOYSE, B.A.

1. Classify the letters of the English alphabet, and show how that alphabet is both defective and redundant.

2. Define an *Abstract* noun: give examples. Do nouns ever become Common?

3. What are the uses of the pronoun "it." Can you give the history of "its"?

4. Comment on the words or parts of words underlined: *The* more *the* merrier; *to*-day; drink *deep*; sound; smash; colour; *bayonet*; *beef-eater*.

5. Instance the steps by which our old inflections have been broken down and lost.

6. Give examples: (*a*) of verbs derived from verbs, (*b*) of nouns derived from nouns, (*c*) of adjectives derived from adjectives; make a note or two on the factors of derivation.

7. Correct or justify, giving your reasons in either case: (*a*) We were no sooner come to the Temple Stairs but we were surrounded with a crowd of watermen. (*b*) Sailing up the river, the whole town may be seen. (*c*) He comes; nor want nor cold his course delay.

8. Name our auxiliary verbs. What is the true meaning of each? When auxiliaries are used, in what mood is the principal verb? justify your assertion.

9. Classify English verbs, and explain the terms of your classification Name a few verbs distinguished from nouns by accent.

10. Is an interjection a part of speech? Substantiate your answer. What distinction exists between O and Oh?

11. Refer each of the following conjunctions to its class: and, otherwise or, yet, consequently, because, if, that, while.

12. Analyse grammatically:—

> What in me is dark
> Illumine; what is low raise and support:
> That to the heighth of this great argument
> I may assert eternal Providence
> And justify the ways of God to men.

SCIENCE SCHOLARSHIPS.

BOTANY.—(*First Paper.*)

Examiner, ...J. W. Dawson, LL.D., F.R.S.

1. Describe the structure of the Woody Wedge of an Exogenous Tree, and state the modifications of this structure in Herbaceous Plants and in Gymnosperms.

2. What are the characters of the Endophleum and Epiphleum in Exogens, and the structure of the outer rind of an Endogenous Stem?

3. What is the condition of the Epicarp in the Drupe, the Legume and the Caryopsis?

4. Describe the various modes of Inflorescence, with native or garden examples.

5. Describe the Parenchyna of a Leaf, with its modifications in aquatic and in condensed plants.

6. What are the special characters of the Prosenchyma of Conifers and the Parenchyma of Mosses?

7. Explain the normal structure of an Anther, its principal modifications and modes of dehiscence.

8. Describe the Capsule of a Moss, and state how fertilisation takes place and how the spores vegetate.

9. Explain the grounds and nature of the Natural System in Botany.

10. How would you proceed in determining an unknown plant? give an illustration.

BOTANY.—(*Second Paper.*)

1. Give the characters of the tribes of North American *Rosaceæ* with examples of the genera.

2. What are the principal generic forms of *Liliaceæ*, *Leguminosæ* and *Sapindaceæ* in Canada?

3. Explain fully the distinctive characters of *Coniferæ* proper and *Taxineæ*.

4. Give a detailed account of any of the orders of Monopetalous Exogens, with the Canadian genera and species.

5. Characterize the orders *Equisetaceæ* and *Lycopodiaceæ*, and state the points most important in their determination.

6. Give the history, habits, and properties of any Canadian Aquatic *Phaenogam.*

7. State the peculiarities of the floral organs in *Cupuliferæ*, *Orchidaceæ* and *Labiatæ*.

8. Describe any Canadian Order containing Timber Trees, with its most important species.

9. State the distinctions between the *Polypodineæ* and *Osmundineæ*, and name the Canadian genera of either.

10. Characterize the genera *Anemone* and *Aquilegia*, and name the Canadian species.

BOTANY.—(*Third Paper.*)

Examination on determination of species of Canadian plants.

ENGLISH LITERATURE.

(Bacon, *Essays*.
Klipstein, *Anglo Saxon Grammar*.)

THURSDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiners, ... { VEN. ARCHDEACON LEACH, D.C.L.
CHAS. E. MOYSE, B.A.

1. In what sense does Bacon use the word *Essay?*

2. Cite from the "Essays" archaic words and obsolete phrases.

3. Reproduce the substance of Bacon's remarks touching; (*a*) The great Advantages of Simulation and Dissimulation; (*b*) The Fruits of Unity in Religion; (*c*) The Distinction between Goodness and Goodness of Nature; (*d*) The four Pillars of Government, the Matter and the Remedies of Seditions; (*e*) The Preparations a Traveller should make; (*f*) The Wives and Prelates who have been dangerous to Kings; (*g*) The Fruits of Friendship; (*h*) The Men fit to found "Plantations;" how the Soil of Plantations should be utilized.

4. Mention the main points of *one* of the following Essays :—Of Great Place; Of Greatness of Kingdoms and Estates; Of Studies; Of Vicissitude of Things.

5. Decline the A. S. definite article, and mention common words derived from its forms.

6. Decline se smith, thœt word, seo wyln, sc sunu.

7. Note differences between the A. S. verb and the Modern.

8. Comment on the words or parts of words *in italics:* wiz*ard*, lad*y*, *wo*man, spin*ster*, now-a-day*s*; *best*; *it* head.

9. Translate into modern English and make a philological or a grammatical note whenever you can:

Me drempte ic stod at a win-tre
That adde waxen buges thre.
Orest it blomede and sithen bar
The beries ripe, wurth ic war:
The kinges kuppe ic haddie on hand,
The beries Thorinne me thugte ic wrong,
And bar it drinken to Pharaon,
Me drempte, als ic was wune to don.

(Spalding, *The History of English Literature.*
Trench, *The Study of Words.*
Trench, *English Past and Present.*)

THURSDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

Examiners, ... } VEN. ARCHDEACON LEACH, D.C.L.
CHAS. E. MOYSE, B.A.

1. Who wrote The Mirror of Fools, The Confession of Golias, *The Vision of Piers the Plowman, Confessio Amantis*, Novum Organum? What remarks does Spalding make concerning the books *in italics?*

2. Reproduce the substance of Spalding's criticism of the Canterbury Tales.

3. Name famous translators of Classical writings into English.

4. Sketch the history and progress of the Review and the Novel.

5. What is Spalding's estimate of Wordsworth's poetry?

6. What words does Trench notice as records of sin in language?

7. Tell the history revealed by *mutton, almanack, church, sacrament, dunce, dimity, book.*

8. What causes tend to produce *new* words? Mention words contributed to our language by the French Revolutionists of the eighteenth century.

9. How do synonyms arise? What is desynonymization? Cite some desynonymized words. What are homonyms?

10. Explain and exemplify Phonetic Decay. Of what use are dialects?

11. Mention a few words we have lost.

12. Make a note or two on the shifting of the accent.

13. What two tendencies modify the meaning of words? Instance a few words of which the meanings have changed.

14. What are Trench's opinions regarding *Phonetic* writing?

CHEMISTRY.

FRIDAY, SEPTEMBER 19TH :—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Define latent heat and specific heat, and point out any relationship existing between the specific heat and atomic weight of elements.

2. Oxygen and Hydrogen are separated by a porous plate, and 3.83 c.c. of Hydrogen pass through the plate in a second, what volume of Oxygen passes through the plate in the opposite direction during the same time.

3. What elements afford exceptions to the general law of atomic volume?

4. Describe fully the preparation and properties of Methylic Hydride.

5. By what tests may an Iodide be recognized when in solution ?

6. How is fuming Sulphuric Acid made ? Give its formula.

7. What difficulty is there in obtaining anhydrous Magnesic Chloride by evaporating its solution to dryness? How is the difficulty obviated ?

8. What are the chief ores of Zinc, and how is the metal obtained from them ?

9. Calculate from their respective formulas the percentage composition of Nitre, Gypsum, and Tricalcic Phosphate.

10. By what tests may Lead, Copper, and Manganese be detected when in solution?

LOGIC.

THURSDAY, SEPTEMBER 18TH :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Distinguish Categorematic and Syncategorematic words, illustrating the distinction by the words in the sentence :—"Uneasy lies the head that wears a crown."

2. Define Singular, Common, Concrete, Abstract, Positive and Negative Terms, giving an example of each.

3. Distinguish Subject, Predicate, and Copula in the following sentence : (*a*) "None but the brave deserve the fair"; (*b*) "That on which man labours he does not willingly destroy."

4. Explain the symbols which denote the Quantity and the Quality of propositions.

5. Explain the different modes of converting propositions, illustrating by an example of each mode.

6. Explain the nature of Logical Division, and state its rules.

7. Distinguish the several terms and propositions in the following Syllogism:—"A whale is not a fish; for it suckles its young, and no fishes do so."

8. Name the Mood and Figure of each of the following Syllogisms, and reduce it to the first Figure:—

(*a*) No x is y;
Some z is y;
∴ Some z is not x.

(*b*) No x is y;
All x is z;
∴ Some z is not y.

9. (*a*) What conclusions alone can be drawn in the second; what, in the third Figure? (*b*) Explain the reason in each case.

10. (*a*) What are the two only legitimate modes of reasoning in Conditional Syllogisms? (*b*) Why are these alone legitimate?

11. Distinguish (*a*) the two main divisions of Fallacies, (*b*) the two principal subdivisions of each.

12. Explain the nature of each of the following Fallacies, and state the class to which it belongs:—

(*a*) Those studies are useful which yield an immediate return in money; and therefore classical studies cannot be useful, because they yield no such return.

(*b*) The stone-masons are benefited by the masons' union; the bricklayers by the bricklayers' union; the hatmakers by the hatmakers' union; in short, every trade by its own union; therefore if all workmen had unions, they would all be benefited thereby.

CLASSICAL AND MODERN LANGUAGE SCHOLARSHIPS.

GREEK.

TUESDAY, SEPTEMBER 16TH: MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—(A) Demosthenes, Olynthiacs, II., § 6 to *ποιῶν ἐξελήλεγκται.*

2. (*a*) Illustrate from ext. (A) the uses of the Participle and of the Infinitive mood. (*b*) What was the date of these speeches of Demosthenes, and in what order were they probably delivered.

3. (*a*) Translate the following:—(1) *προςήκει προθύμως ἐθέλειν ἀκούειν τῶν βουλομένων συμβουλεύειν.* (2) *ἀλλὰ καὶ τῆς ὑμετέρας τύχης ὑπολαμβάνω πολλὰ τῶν δεόντων ἐκ τοῦ παραχρῆμα ἐνίοις ἂν ἐπελθεῖν εἰπεῖν.* (3) *χωρὶς γὰρ τῆς περιστάσης ἂν ἡμᾶς αἰσχύνης εἰ καθυψείμεθά τι τῶν πραγμάτων.* (*b*) Explain the literal signification of:—*ἐκνενευρισμένοι, προσθήκης, τιθασεύουσι χειροήθεις, ἀφορμάς, ὑποστείλασθαι, πεφηνάκικεν, ἀνεχαίτισε, προπέποται.*

4. Translate:—(B) Thucydides, Bk. I., chap. xliv.

5. (*a*) Ext. (B):—*προτέρᾳ, ὑστεραία*, supply the ellipsis. (2) *εἰ ἐκέλευόν*, note and explain the use of the Imperf. here. (3) *ἐπιμαχίαν*, explain the full import of this. (4) *βοηθεῖν*, construe the Infin. (5) *τῆς Ἰταλίας*, what Genitive?

6. Translate:—(C) Herodotus, Bk. VIII., chaps. liv-v.

7. Comment historically or grammatically, as may be required, in explanation of the following phrases from Herod. Book VIII. (*a*) Cap. 3.—*πρόφασιν τὴν Παυσανίεω ὕβριν * * * τοὺς Λακεδαιμονίους.* (*b*) ib. 5; *πλεγέντες δώροισι.* (*c*) ib. 6; *μηδὲ πυρφόρον περιγενέσθαι.* (*d*) ib. 10; *ὅσοισι δὲ καὶ ἡδομένοισι τὸ γινόμενον.* (*e*) ib. 21; *παλήσειε.* (*f*) ib. 23; *ἡλίῳ σκιδναμένῳ.* (*g*) ib. 41; *ὡς τῆς θεοῦ ἀπολελοιπυίης τὴν ἀκρόπολιν.*

8. Translate:—(D) Xenophon, Hellenics, Bk. I., chap. iv., §§ 12-14, inclusive.

9. Translate the following, noting particularly the import of the Prepositions:—(1) *ἀνήχθη εὐθὺς ἐπὶ Σάμου.* (2) *ἀνήχθη εὐθὺ Γυθείου ἐπὶ κατασκοπῇ τῶν τριήρων, καὶ τοῦ οἴκαδε κατάπλου ὅπως ἡ πόλις πρὸς αὐτὸν*

ἔχει. (Distinguish between the meaning of εὐθὺς and εὐθύ. How do you construe the Gen. κατάπλου? Give the force of the Preposition in κατάπλου. What do you supply with ὅπως ἔχει?) (3) ἔρρει τὰ κᾶλα. Μίνδαρος ἀπεσσούα. Πεινῶντι τῶνδρες, ἀπορίομες, τί χρὴ δρᾶν. (Name the dialect of (3) and turn it into Attic. For κᾶλα, the vulg. lect. is καλά; how do they differ, and which is preferable?)

10. Translate:—(E) Euripides, Medea, vss. (*a*) 94-110. (*b*) 1361-1377.

11. (*a*) State the different interpretations that have been given of vss. 106-7. (*b*) Give the exact force of the tenses in the following:—vs. 9—πείσασα—κατῴκει. 33—ἀτιμάσας—ἔχει. 78—ἀπωλόμεσθ', ἀρα. 223—οὐδ' ἤνεσα.

LATIN.

WEDNESDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—(A) Tacitus, Annals, Book I, chap. 1.

2. (*a*) Write explanatory notes on the grammatical construction of the following extt.:—(1) *Hostibus* incautum. (2) Festam *Germanis* noctem et *solemnibus epulis* ludicram. (3) Obstantia *silvarum*. (4) Haesere *munimentis*. (5) Femina ingens *animi*. (6) *Temporis* ac *necessitatis* monet. (*b*) Translate the following:— (1) Dictaturae ad tempus sumebantur. (2) Lepidi atque Antonii arma in Augustum cessere. (3) Consulem se ferens. (4) Haec atque talia agitantibus gravescere valitudo Augusti. (5) Qui e servitio erant.

3. Translate:—(B) Pliny, Select Letters:—

Sed erat acre ingenium, incredibile studium, summa vigilantia. Lucubrare Vulcanalibus incipiebat, non auspicandi causa, sed studendi, statim a nocte multa, hieme vero ab hora septima, vel cum tardissime, octava, saepe sexta. Erat sane somni paratissimi, non numquam etiam inter ipsa studia instantis et deserentis. Ante lucem ibat ad Vespasianum imperatorem (nam ille quoque noctibus utebatur), inde ad delegatum sibi officium. Reversus domum, quod reliquum temporis, studiis reddebat. Post cibum saepe, quem interdiu levem et facilem veterum more sumebat, aestate siquid otii, iacebat in sole, liber legebatur, adnotabat excerpebatque. Nihi, enim legit quod non excerperet: dicere etiam solebat nullum esse librum tam malum, ut non aliqua parte prodesset. Post solem plerumque frigida lavabatur: deinde gustabat dormiebatque minimum, mox quasi alio die studebat in cenae tempus. Super hanc liber legebatur, adnotabatur, et quidem cursim.

4 (*a*) Give the derivation and exact meaning of the following words:—Verna, euripus, mollis, gestatio, triclinia, pugillares, panarium, lagunculam, proceritas, fabula, lepŏris, lepōris (*b*) A short account of Pliny. What emperors were reigning at the dates of his birth and death, severally?

5. Translate:—(C) Horace, (*a*) Satires I., sat. vi., vss. 45-62. (*b*) Epistles, I., ep. ix.

6. (*a*) Libertino patre natum; mihi pareret legio; Te sortitus amicum: —Explain these personal references on the part of Horace. (*b*) 'Claudi':—Who was this? (*c*) Frontis urbanae praemia:—How do you interpret? (*d*) Tui gregis:—What construction?

7. Translate:—(D) Terence, Adelphi, Act IV., sc. 2, vss. 1-21.

8. (*a*) Explain the following forms:—Produxe, aibas, patrissas, tantillum, perquam, sursum, illic, ruri, sis, cedo. (*b*) Construe *gentium*, *malum*, and *infelicitatis* in ext. (D). (*c*) What is the force of the proposition in *obnuntio*

9. Translate:—(E) Virgil, Georgics, Book I., vss. 118-138.

10. (*a*) Explain the exact meaning of:—*signare*, *coloni*, *meditando*, and *extunderet* in ext. (E). (*b*) *Pleiadas*:—by what other name were they called? *Hyadas*:—give the etymology. *Lycaonis Arcton*:— explain the mythological reference. (*c*) What ancient writers had Virgil before him in the composition of the *Georgics*?

GREEK AND LATIN PROSE COMPOSITION.

TUESDAY, SEPTEMBER 16TH:—AFTERNOON, 2 TO 5.

Examiner,..... ....REV. GEORGE CORNISH, LL.D.

1. Translate into Greek:—

(*a*) The general said, that if the citizens had done what the philosopher told them to do they would now be faring better.

(*b*) He sent his sons to the master in order to have them taught philosophy.

(*c*) He was so ambitious as to bear and do anything for the sake of becoming powerful.

(*d*) Having said this he rose up and went into the city.

(*e*) Since this is the case, let us tarry no longer, but go away at once.

2. Translate into Latin:—

Damon and Phintias had formed so strong a friendship for each other, that they were ready to die one for the other. When one of them had been condemned to death by Dionysius, the tyrant, and had obtained time

in which to go home and arrange his affairs, the other did not hesitate to offer himself to the tyrant, as a surety for his friend's return, on the understanding that if his friend had not returned by the appointed day, he would have to die in his stead. Accordingly all, and especially Dionysius, eagerly awaited the issue of this strange affair. As the appointed day at length drew near, and he did not return, everybody began to blame the other's rashness in becoming bondsman; but he asserted that he had no fears for the good faith of his friend, and upon the stated day he returned. The tyrant, admiring their faithfulness, begged that he might be admitted as a third in their friendship, and released from punishment the man whom he had determined to put to death.

ANCIENT HISTORY.

WEDNESDAY, SEPTEMBER 17TH:—AFTERNOON, 2 TO 5.

Examiner, ... REV. GEORGE CORNISH, LL.D.

1. (*a*) Give the derivation and proper meaning of the term *History*, and name the parts into which History is divided. (*b*) What are the sources of written History as enumerated by Rawlinson? (*c*) What are the cognate sciences with History? Show their importance.

2. Give a short account of the ancient kingdoms of Asia Minor.

3. Give an account of the country, race, commerce and colonies of the Phœnicians. Name the chief ancient and modern authorities for their history.

4. To which of the three great races of mankind did the Persians belong? Give an account of their system of government, and of their military conquests up to the time of the war with Greece.

5. (*a*) Name the earliest inhabitants of Greece, and give the legendary genealogy of the Hellenes. (*b*) Specify the most noticeable features of early Greek society as represented in the Homeric poems. (*c*) What causes tended to Greek unity? To what may their partial operation and ultimate failure be attributed?

6. An account of the causes, geographical limits, and tribal distribution of Greek Colonization. Distinguish between ἀποικίαι and κληρουχίαι.

7. When and under what circumstances was Greece reduced into the condition of a Roman Province?

8. (*a*) The leading races of ancient Italy. (*b*) What races offered the stoutest opposition to Rome in the course of her subjugation of Italy ?

9. The true character and objects of the political agitation of the Gracchi.

FRENCH.

FRIDAY, SEPTEMBER 19TH :—MORNING, 9 TO 12.

Examiner,..... .....P. J. DAREY, M.A., B.C.L.

Traduisez en anglais :

Chrysale. Qu'importe qu'elle (1) manque aux lois de Vaugelas, (2)
Pourvu qu'à la cuisine elle ne manque pas ?
J'aime bien mieux, pour moi, qu'en épluchant ses herbes
Elle accommode mal les noms avec les verbes,
Et redise cent fois un bon ou méchant mot
Que de brûler ma viande ou saler trop mon pot.
Je vis (4) de bonne soupe et non de beau langage,
Vaugelas n'apprend point à bien faire un potage ;
Et Malherbe et Balzac, (3) si savans en beaux mots,
En cuisine peut-être auraient été des sots.

Philaminte. Que ce discours grossier terriblement assomme !
Et quelle indignité, pour ce qui s'appelle homme,
D'être baissé sans cesse aux soins matériels
Au lieu de se hausser vers les spirituels.
Le corps, cette guenille, est-il d'une importance,
D'un prix à mériter seulement qu'on y pense ?
Et ne devons-nous (5) pas laisser cela bien loin.

MOLIÈRE, *les Femmes savantes, Acte II., sec. VII.*

1. A qui le pronom *elle* se rapporte-t-il ?

2. Que veut dire : *aux lois de Vaugelas?* Qui était Vaugelas ? Quand vécut-il ?

3. Qui étaient Malherbe et Balzac ? Quand vécurent-ils ?

4. Quelle autre signification a le mot *vis*. Quels sont les infinitifs de ces deux verbes ?

5. Quels sont les différents cas où l'on doit placer le pronom sujet après le verbe ?

II. Quelle comédie Corneille a-t-il écrite ?

III. Nommez le plus grand moraliste du XVIe siècle. Quel ouvrage a-t-il composé ? Qu'est-ce qu'il décrit dans cet ouvrage ?

IV. Quel est l'auteur qui s'est le plus distingué dans le genre épistolaire au XVIIe siècle ? Donnez quelques détails biographiques de cet auteur.

V. Nommez l'écrivain le plus célèbre du XVe siècle, et dites dans quel genre littéraire il s'est rendu fameux.

VI. Ecrivez correctement les temps composés des verbes dont les infinitifs sont écrits en italique dans le morceau suivant, et expliquez pourquoi vous les écrivez ainsi :

L'histoire suivante que vous avez peut-être *entendre* raconter montre le moyen de vivre en paix : sept solitaires d'Egypte s'étant *retirer* auprès d'un temple d'idoles qu'on avait *abandonner*. L'abbé Nul, un de ces solitaires jetait tous les matins des pierres à une idole, et lui disait tous les soirs : " Pardonnez-moi les outrages que je me suis *plaire* à vous faire."....

VI. Traduisez en français :

The fact that a man's language is a part of his character—that the words he uses are an index to his mind and heart—must have been noted long before language was made a subject of investigation. " Discourse," says Quintilion, " reveals character and discloses the secret disposition and temper ; and not without reason did the Greeks teach that as a man lived so would he speak." If a man is clear-headed, noble-minded, sincere, just, and pure in thought and feeling, these qualities will be symbolized in his words.

MATHEWS.
Words, their use and abuse.

FRENCH.

THURSDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

Examiner,.....P. J. DAREY, M.A., B.C.L.

I. Translate into English :

L'Hirondelle et les petits oiseaux.

Une hirondelle en ses voyages
Avait beaucoup appris. Quiconque a beaucoup vu
Peut avoir beaucoup retenu.
Celle-ci prévoyait jusqu'aux moindres orages,
Et devant qu'ils fussent éclos, (1)
Les annonçait aux matelots.
Il arriva qu'au temps que (2) la chanvre se sème,
Elle vit un manant (3) en couvrir maints sillons.
Ceci ne me plaît pas, dit-elle aux oisillons : (4)
Je vous plains ; car, pour moi dans ce péril extrême
Je saurai m'éloigner ou vivre en quelque coin.
Voyez-vous cette main qui par les airs chemine ?
Un jour viendra, qui n'est pas loin,

Que ce qu'elle répand sera votre ruine,
De là naîtront engins (5) à vous envelopper
Et lacet pour vous attraper,
Enfin mainte et mainte machine
Qui causera dans la saison
Votre mort ou votre prison :
Gare la cage ou le chaudron !
C'est pourquoi, leur dit l'hirondelle,
Mangez ce grain et croyez-moi.

LAFONTAINE, *Liv.* 1, *fable VIII.*

II. Write in full the primitive tenses of the verbs in the first six lines.

1. What is the proper sense of *éclos ?* In what sense is it used here ?

2. How do you explain that *que?* What word would we use at present ?

3. What is the meaning of *manant* here ? What was its primitive sense ? And what is its present meaning ?

4. Of what word is *oisillous* the diminutive ? Give another similar example

5. What is the etymology of engins ?

III. How do you render into French the tenses of the verb *to be* in the following sentences : The horticultural exhibition was to have taken place the day before yesterday. Am I to transcribe a page of that book ?

IV. What remark do you make on the verbs ending in *eler* and in *eter ?* Give examples.

V. Translate into French :

Peace, think what you are talking about. Do you know, my wife, that you do not know of whom you speak, when you speak of him. He is a person of greater importance than you think, a lord who is well considered at court, and who speaks to the king just as I speak to you. Is it not a very honourable thing for me that a person of such rank should be seen coming quite often to my house ; a person who calls me his dear friend and treats me as if I were his equal? One could never guess the high regard he has for me, and, before every body, he treats me in such a manner that I am embarrassed.

Translated from the *Bourgeois gentilhomme.*

CHEMISTRY.

FRIDAY, SEPTEMBER 19TH :—AFTERNOON, 2 TO 5.

Examiner,.....B. J. HARRINGTON, B.A., Ph. D.

1. Classify the more important metals according to atomicity. State also by means of what reagents the metals are separated into groups for the purposes of analysis.

2. Describe the preparation of Caustic Potash.

3. What are the principal sources of Nickel and Cobalt? Give tests for the detection of these metals.

4. How much Silver would be required to produce 75 grammes of Lunar Caustic?

5. How may soluble salts of Barium be obtained from the insoluble Sulphate?

6. By what tests may Mercurous be distinguished from Mercuric and Ferrous from Ferric salts?

7. What is the composition of Alum, Blue Vitriol, Vermilion and Type Metal? Give the chemical formulas of the three first substances.

8. What are the properties and uses of the metals Magnesium and Platinum?

9. Explain the following equations:

$$K_2 Cr_2 O_7 + H_2 SO_4 = K_2 SO_4 + H_2 O + 2 Cr O_3.$$
$$As_2 O_3 + 2 KHO = 2 K As O_2 = H_2 O.$$

SCIENCE SCHOLARSHIPS.

MATHEMATICS.

DIFFERENTIAL AND INTEGRAL CALCULUS.

WEDNESDAY, SEPTEMBER 17TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. The equation of the curve being in the form

$$u = f(x, y) = 0$$

prove the expresssion for the radius of curvature

$$\rho = \frac{\left\{ \left(\frac{du}{dx}\right)^2 + \left(\frac{du}{dy}\right)^2 \right\}}{\frac{d^2u}{dx^2}\left(\frac{du}{dy}\right)^2 - 2\,\frac{d^2u}{dxdy}\,\frac{du}{dx}\,\frac{du}{dy} + \frac{d^2u}{dy^2}\left(\frac{du}{dx}\right)^2}$$

2. Define *pedal* curves, and show that the equation of the pedal of

$$r^m = a^m \cos m\,\theta$$

is found by substituting $\frac{m}{m+1}$ for m in the equation of the curve.

3. Find the maximum and minimum values of the fraction

$$\frac{ax^2 + 2\,bxy + cy^2}{a_1 x^2 + 2\,b_1 xy + c_1 y^2}$$

4. Find the values, when $x = 0$, of

$$\frac{x + \sin x - \sin 2x}{2x + \tan x - \tan 3x}\,; \quad \frac{x^2 + 2\cos x - 2}{x^4}.$$

5. If $\frac{x}{e^x - 1} = 1 - \frac{x}{2} + \frac{B_1}{1.2}x^2 - \frac{B_2}{1.2.3.4}x^4 + \frac{B_3}{1.2\ldots6}x^6 - ,\&c.$

prove that $B_1 = \frac{1}{6}$, $B_2 = \frac{1}{30}$, $B_3 = \frac{1}{42}$, $B_4 = \frac{1}{30}$.

6. If $u = (\sin^{-1} x)^2$

prove that

$$(1 - x^2)\frac{d^2u}{dx^2} - x\frac{du}{dx} = 2$$

and

$$(1 - x^2)\frac{d^{n+2}u}{dx^{n+2}} - (2n + 1)x\frac{d^{n+1}u}{dx^{n+1}} - n^2\frac{d^nu}{dx^n} = 0.$$

7. Differentiate

$$y = \cos^{-1}\frac{b + a\cos x}{a + b\cos x} \text{ and } x = e^{\frac{x-y}{y}}$$

8. Find the surface of the ellipsoid generated by the revolution of the ellipse

$$\frac{x^2}{a^2} = \frac{y^2}{b^2} = 1$$

round its minor axis.

9. Find the length of the logarithmic curve $y = ca^x$

10. Find the area of the curve

$$c\,y^2 = (x - a)(x - b)^2$$

11. Show that the expression $e^x Pdx$ is immediately integrable whenever P can be divided into the sum of two functions of x, one of which is the derived of the other.

12. Integrate $\int \frac{2\cos x + 3\sin x}{3\cos x + 2\sin x}dx$

13. Find a formula of reduction for

$$\int \frac{x^m\,dx}{(a + cx^2)^{\frac{1}{2}}}$$

When m is a positive integer.

14. Integrate

$$\int \frac{dx}{x^{\frac{1}{2}}(1 + x^2)^{\frac{5}{4}}}, \int \frac{x^2\,dx}{x^4 + x^2 - 2}, \int \frac{x^2\,dx}{(a^3 + x^3)^{\frac{2}{3}}}.$$

HIGHER ALGEBRA, THEORY OF EQUATIONS, TRIGONOMETRY.

THURSDAY, SEPTEMBER 18TH :—AFTERNOON, 2 TO 5.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. If A be the area of the triangle of which $x_1\ y_1$, $x_2\ y_2$, $x_3\ y_3$ are the vertices, and R the radius of its circumscribing circle, prove that

$$2\,A\,R = \begin{vmatrix} x_1, & y_1, & R, \\ x_2, & y_2, & R \\ x_3, & y_3, & R \end{vmatrix}$$

and hence show that

$$R = \frac{a\,b\,c}{4\,A}$$

a, b, c, being the sides of the triangle.

2. Define the *reciprocal* of a given determinant. If a, b, c, &c., and A, B, C, &c., be the constituents of a given determinant and its reciprocal respectively, prove

$$(A_1\ B_2\ C_3) = (a_1\ b_2\ c_3)^2.$$

3. If u_1, v_1, &c., denote the first differentials of u, v, &c., with respect to x; u_2, v_2, the second differentials, &c., prove

$$\frac{d}{dx}\begin{vmatrix} u, & v, & w \\ u_1, & v_1, & w_1 \\ u_2, & v_2, & w_2 \end{vmatrix} = \begin{vmatrix} u, & v, & w \\ u\ , & v_1, & w_1 \\ u_3, & v_3, & w_3 \end{vmatrix}$$

4. If the constituents of one row or column of a determinant be respectively equal to the sum of the corresponding constituents of other rows or columns, multiplied respectively by constant factors, the determinant vanishes.

5. The numerically greatest negative co-efficient of an equation increased by unity is a superior limit of the positive roots of an equation which is in its simplest form.

6. If two quantities including between them an *odd* number of roots of the equation $f(x) = 0$ be successively substituted for x in $f(x)$, the results will have *contrary* signs.

7. Solve the reciprocal equation :

$$8\,x^6 - 16\,x^4 - 25\,x^3 - 16\,x^2 + 8 = 0$$

8. Solve the following equation, the product of two roots being 2

$$3\,x^3 - 2\,x^2 - 27\,x + 18 = 0$$

9. Sum to n terms the series

$$Sin\ A + sin\ (A + B) + sin\ (A + 2\ B) + \text{\&c.}$$

10. Prove that the sum of the angles of a spherical triangle lies between two and six right angles.

11. Prove that if E be the spherical excess

$$tan\ \tfrac{1}{4}\ E = \sqrt{tan\ \tfrac{1}{2}\ s\ tan\ \tfrac{1}{2}\ (s - a)\ tan\ \tfrac{1}{2}\ (s - b)\ tan\ \tfrac{1}{2}\ (s - c)}$$

12. Prove

$$cos\ m\ A = cos^m\ A - \frac{m\ (m-1)}{1.\ 2}\ cos^{m-2}\ A\ sin^2\ A + \text{\&c.}$$

ANALYTIC GEOMETRY.—(*First Paper.*)

FRIDAY, SEPTEMBER 19TH :—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. The radius of curvature at any point on a central conic is

$$\frac{b'^3}{a\ b}.$$

2. The locus of the intersection of tangents to a parabola which cut at right angles is the directrix.

3. The intercept which the polars of any two points on a parabola cut off on the axis is equal to the intercept between perpendiculars from those points on the axis.

4. The triangle which any tangent to an hyperbola forms with the asymptotes has a constant area.

5. The sum of two focal chords of an ellipse or hyperbola drawn parallel to two conjugate diameters is constant.

6. Prove analytically that confocal conics cut at right angles.

7. The perpendicular from the centre on the tangent to an ellipse $= \frac{a\ b}{b'}$.

8. The squares of the ordinates of any diameter of a conic section are proportional to the rectangles under the segments which they make on the diameter.

9. The point (1, 1,) is on the curve

$$3x^2 - 4xy + 2y^2 + 7x - 5y - 3 = 0;$$

transform the equation to parallel axes through the point, and find the tangent at it.

10. Given any two points A and B, and their polars, with respect to a circle whose centre is O; let fall a perpendicular AP from A on the polar of B, and a perpendicular BQ from B on the polar of A; prove

$$\frac{OA}{AP} = \frac{OB}{BQ}.$$

11. Show that the following equation represents right lines, and find the lines:—

$$x^2 - 5xy + 4y^2 + x + 2y - 2 = 0.$$

12. Find the area of the triangle formed by the three points $x_1\ y_1$, $x_2\ y_2$, $x_3\ y_3$.

ANALYTIC GEOMETRY.—(*Second Paper.*)

FRIDAY, SEPTEMBER 19th.—AFTERNOON 2 TO 5.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. If two conics have each double contact with a third, their chords of contact with the third conic and a pair of their chords of intersection with each other will all pass through the same point and will form an harmonic pencil.

2. Given four points on a conic, the anharmonic ratio of the pencil joining them to any fifth point on the conic is constant.

3. If $S=0$, $\alpha=0$, $\beta=0$, represent respectively a given circle and two given straight lines in abridged notation, find the locus of a point such that the square of the tangent from it to the circle is in a constant ratio to the product of its distances from the two lines, and prove that it passes through the four points in which the given lines intersect the circle.

4. Prove that the length of a chord of the circle of curvature which passes through the focus of a central conic section is $\frac{2b'^2}{a}$.

5. The evolute of the parabola $y^2 = px$ is

$$27py^2 = 16(x - \tfrac{1}{2}p)^3.$$

6. If a chord PP' of a conic pass through a fixed point, O, prove that $\tan \tfrac{1}{2} PFO \cdot \tan \tfrac{1}{2} P'FO$ is constant.

7. Find the parameter of the parabola

$$\frac{x^2}{a^2} - \frac{2xy}{ab} + \frac{y^2}{b^2} - \frac{2x}{a} - \frac{2y}{b} + 1 = 0$$

8. If any variable tangent to a conic section meet two fixed parallel tangents, it will intercept portions on them whose rectangle is constant, and equal to the square of the semi-diameter parallel to them.

9. Give Boole's demonstration that, if we transform the equation of the second degree from one pair of oblique axes to any other, the quantities

$$\frac{a + b - 2h\cos\omega}{\sin^2\omega} \text{ and } \frac{ab - h^2}{\sin^2\omega}$$

remain unaltered.

10. The equation of the tangents from a given point $x_1\, y_1$ to the circle

$$x^2 + y^2 = r^2$$

is $(x_1^2 + y_1^2 - r^2)(x^2 + y^2) - r^2 = (x\,x, + y\,y_1 - r^2)^2$

11. Given three lines $\alpha = 0$, $\beta = 0$, $\gamma = 0$, forming a triangle, the equation of any right line, $a\,x + b\,y + c = 0$ can be put in the form

$$l\,\alpha + m\,\beta + n\,\gamma = 0.$$

12. Find the area of the triangle formed by the three lines $A_1x + B_1y + C = 0$, $A_2x + B_2y + C_2 = 0$, $A_3x + B_3y + C_3 = 0$.

SESSIONAL EXAMINATIONS, 1880.

ORDINARY CLASSICS.

FIRST YEAR.

GREEK.—XENOPHON.—HELLENICS, BOOK II.

THURSDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A) Οἱ ἐν τῇ Χίῳ μετὰ τοῦ Ἐτεονίκου στρατιῶται ὄντες, ἕως μὲν θέρος ἦν, ἀπό τε τῆς ὥρας ἐτρέφοντο καὶ ἐργαζόμενοι μισθοῦ κατὰ τὴν χώραν· ἐπεὶ δὲ χειμὼν ἐγένετο καὶ τροφὴν οὐκ εἶχον γυμνοί τε ἦσαν καὶ ἀνυπόδητοι, συνίσταντο ἀλλήλοις καὶ συνετίθεντο ὡς τῇ Χίῳ ἐπιθησόμενοι· οἷς δὲ ταῦτα ἀρέσκοι κάλαμον φέρειν ἐδόκει, ἵνα ἀλλήλους μάθοιεν ὁπόσοι εἶησαν. πυθόμενος δὲ τὸ σύνθημα ὁ Ἐτεόνικος, ἀπόρως μὲν εἶχε τί χρῷτο τῷ πράγματι διὰ τὸ πλῆθος τῶν καλαμηφόρων· τό τε γὰρ ἐκ τοῦ ἐμφανοῦς ἐπιχειρῆσαι σφαλερὸν ἐδόκει εἶναι, μὴ εἰς τὰ ὅπλα ὁρμήσωσι καὶ τὴν πόλιν κατασχόντες καὶ πολέμιοι γενόμενοι ἀπολέσωσι πάντα τὰ πράγματα, ἂν κρατήσωσι.

(B) Ἐν δὲ ταῖς Ἀθήναις τῆς Παράλου ἀφικομένης νυκτὸς ἐλέγετο ἡ συμφορά, καὶ οἰμωγὴ ἐκ τοῦ Πειραιῶς διὰ τῶν μακρῶν τειχῶν εἰς ἄστυ διῆκεν ὁ ἕτερος τῷ ἑτέρῳ παραγγέλλων· ὥστ' ἐκείνης τῆς νυκτὸς οὐδεὶς ἐκοιμήθη, οὐ μόνον τοὺς ἀπολωλότας πενθοῦντες, ἀλλὰ πολὺ μᾶλλον ἔτι αὐτοὶ ἑαυτούς, πείσεσθαι νομίζοντες οἷα ἐποίησαν Μηλίους τε Λακεδαιμονίων ἀποίκους ὄντας, κρατήσαντες πολιορκίᾳ, καὶ Ἱστιαιέας καὶ Σκιωναίους καὶ Τορωναίους καὶ Αἰγινήτας καὶ ἄλλους πολλοὺς τῶν Ἑλλήνων. τῇ δ' ὑστεραίᾳ ἐκκλησίαν ἐποίησαν, ἐν ᾗ ἔδοξε τούς τε λιμένας ἀποχῶσαι πλὴν ἑνὸς καὶ τὰ τείχη εὐτρεπίζειν καὶ φυλακὰς ἐφιστάναι καὶ τἆλλα πάντα ὡς εἰς πολιορκίαν παρασκευάζειν τὴν πόλιν.

(C) Ἀλλ', ὦ ἄνδρες, οὕτω χρὴ ποιεῖν ὅπως ἕκαστός τις ἑαυτῷ συνείσεται τῆς νίκης αἰτιώτατος ὤν. αὕτη γὰρ ἡμῖν, ἂν θεὸς θέλῃ, νῦν ἀποδώσει καὶ πατρίδα καὶ οἴκους καὶ ἐλευθερίαν καὶ τιμὰς καὶ παῖδας, οἷς εἰσί, καὶ γυναῖκας. ὦ μακάριοι δῆτα, οἳ ἂν ἡμῶν νικήσαντες ἐπίδωσι τὴν πασῶν ἡδίστην ἡμέραν. εὐδαίμων δὲ καὶ ἄν τις ἀποθάνῃ· μνημείου γὰρ οὐδεὶς οὕτω πλούσιος ὢν καλοῦ τεύξεται. ἐξάρξω μὲν οὖν ἐγὼ ἡνίκ' ἂν καιρὸς ᾖ παιᾶνα· ὅταν δὲ τὸν Ἐνυάλιον

παρακαλέσωμεν, τότε πάντες ὁμοθυμαδὸν ἀνθ' ὧν ὑβρίσθημεν τιμωρώμεθα τοὺς ἄνδρας.

2. Explain carefully the construction of:—(*a*) ἐργαζόμενοι μισθοῦ. (*b*) συνίσταντο ἀλλήλοις ὡς τῇ Χίῳ ἐπιθησόμενοι. (*c*) ἀπόρως εἶχε τί χρῷτο τῷ πράγματι. (*d*) ἕκαστός τις ἑαυτῷ συνείσεται τῆς νίκης αἰτιώτατος ὤν. (*e*) ᾤετο ἄν τις δεήσειν τοῖς πρωτοστάταις ἐκ τοῦ ἴσου μάχεσθαι.

3. Write explanatory notes on the following :—(*a*) ἔπλευσαν εἰς Αἰγὸς ποταμούς. (*b*) παιᾶνα. (*c*) τὸν Ἐννάλιον. (*d*) τὸ Βενδίδειον. (*e*) θέσθαι τὰ ὅπλα. (*f*) ἀποκοτταβίσαντα.

4. Give as accurately as you can the meaning and etymology of the following words :—παράσπονδον, σκευοφόρων, εὐημερίας, οἱ βέλτιστοι, μετοίκων, ἀτίμους, ἐπιτίμους, ἡ Πάραλος, τὰ παραβλήματα, τὸ ξύνθημα.

5. Parse carefully the following verbs, naming their principal parts :—χρῷτο, ἀπολέσωσι, ἐσήμηνεν, ἐροῦντας, διέσωσαν, εἶα, συλλεγῶσιν, ἀνιέναι, κατῆεσαν, συνειλημμένων.

6. Write down the *Nom. Sing* and *Plu.* of the following :—ἀσπίσιν, χειμῶνα, ἡμίσει, ἱππέας, πλήθει, ἀσφαλεῖ. (*b*) Decline :—γίγας, φλόξ, ταχύς, κύων, μέγας, πᾶς. (*c*) Distinguish between :—οὐδεὶς and μηδείς : αὐτὸς and ὁ αὐτός : ὅδε, οὗτος and ἐκεῖνος.

7. (*a*) "The Optative is the regular attendant of the Historical tenses";—illustrate this by examples. (*b*) State and illustrate the rule for the number of the verb when its subject is a *neuter plural*. (*c*) How are neuter adjectives used adverbially? (*d*) What cases does ἐπὶ govern, and with what differences of meaning?

8. Translate into Greek :—(1) The men of the present day speak well. (2) Good men are contented with what comes from the Gods. (4) The philosophers are wise. (4) The same soldiers came and laid waste half the country. (5) The father said that he came to see his son.

INTERMEDIATE EXAMINATION.

THURSDAY, APRIL 1ST:—MORNING, 9 TO 12.

GREEK.—EURIPIDES, MEDEA.

Examiners, ... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, M.A.

1. Translate:—

(*Assign to each verse the name of the speaker.*)

(A) Μὴ, πρός σε γονάτων τῆς τε νεογάμου κόρης.
λογους ἀναλοῖς· οὐ γὰρ ἂν πείσαις ποτέ.
ἀλλ' ἐξελᾷς με, κοὐδὲν αἰδέσει λιτάς;
φιλῶ γὰρ οὐ σὲ μᾶλλον ἢ δόμους ἐμούς.
ὦ πατρὶς, ὡς σου κάρτα νῦν μνείαν ἔχω.
πλὴν γὰρ τέκνων ἔμοιγε φίλτατον πόλις.
φεῦ φεῦ· βροτοῖς ἔρωτες ὡς κακὸν μέγα.
ὅπως ἄν, οἶμαι καὶ παραστῶσιν τύχαι.
Ζεῦ, μὴ λάθοι δε τῶν δ' ὃς αἴτιος κακῶν.
ἕρπ' ὦ ματαία, καὶ μ' ἀπάλλαξον πόνων.
πονοῦμεν ἡμεῖς κοὐ πόνων κεχρήμεθα.
τάχ' ἐξ ὀπαδῶν χειρὸς ὡσθήσει βίᾳ.
μὴ δῆτα τοῦτό γ', ἀλλά σ' αἰτοῦμαι, Κρέον.
ὄχλον παρέξεις, ὡς ἔοικας, ὦ γύναι.
φευξούμεθ'· οὐ τοῦθ' ἱκέτευσα σοῦ τυχεῖν.
τί δ' οὖν βιάζει κοὐκ ἀπαλλάσσει χθονός;

(B) Δράσω τάδ'· ἀλλὰ βαῖνε δωμάτων ἔσω,
καὶ παισὶ πόρσυν' οἷα χρὴ καθ' ἡμέραν.
ὦ τέκνα, σφῷν μὲν ἔστι δὴ πόλις
καὶ δῶμ', ἐν ᾧ λιπόντες ἀθλίαν ἐμὲ
οἰκήσετ' ἀεὶ μητρὸς ἐστερημένοι·
ἐγὼ δ' ἐς ἄλλην γαῖαν εἶμι δὴ φυγὰς,
πρὶν σφῷν ὄνασθαι κἀπιδεῖν εὐδαίμονας,
πρὶν λέκτρα καὶ γυναῖκα καὶ γαμηλίους
εὐνὰς ἀγῆλαι λαμπάδας τ' ἀνασχεθεῖν.
ὦ δυστάλαινα τῆς ἐμῆς αὐθαδίας.
ἄλλως ἄρ' ὑμᾶς, ὦ τέκν', ἐξεθρεψάμην,
ἄλλως δ' ἐμόχθουν καὶ κατεξάνθην πόνοις,
στερρὰς ἐνεγκοῦσ' ἐν τόκοις ἀλγηδόνας.
ἦ μήν ποθ' ἡ δύστηνος εἶχον ἐλπίδας
πολλὰς ἐν ὑμῖν γηροβοσκήσειν τ' ἐμὲ
καὶ κατθανοῦσαν χερσὶν εὖ περιστελεῖν,
ζηλωτὸν ἀνθρώποισι· νῦν δ' ὄλωλε δὴ
γλυκεῖα φροντὶς. σφῷν γὰρ ἐστερημένη
λυπρὸν διάξω βίοτον ἀλγεινόν τ' ἐμοί.

2. Translate as accurately as you can the following extt., adding an explanatory note where you deem it to be necessary :—(*a*) *ἐγὼ δ' ἄφρων ἦ χρῆν μετεῖναι τῶνδε τῶν βουλευμάτων καὶ ξυμπεραίνειν.* (*b*) *εἰκὸς γὰρ ὀργὰς θῆλυ ποιεῖσθαι γένος, γάμους παρεμπολῶντος ἀλλοίους πόσει.* (*c*) *οἶδα γὰρ πόλλους βροτῶν σεμνοὺς γεγῶτας, τοὺς μὲν ὀμμάτων ἄπο, τοὺς δ' ἐν θυραίοις· οἱ δ' ἀφ' ἡσύχου ποδὸς δύσκλειαν ἐκτήσαντο καὶ ῥᾳθυμίαν.*

3. *φόβος εἰ πείσω,—οὐκ οἶδ' ἂν εἰ πείσαιμι,—οὔ σε μὴ μεθῶ,—οὐ μὴ δυσμενὴς ἔσει,—ἀτιμάσας ἔχει,—πῶς ἂν ὀλοίμαν,—ταῦτ' οὐκ ἐπήνεσα* :—Discuss the meaning of these forms of expression, severally, and express it in Latin where you can.

4. Explain the following constructions :—(*a*) *τῆς ἐμῆς ἀνθαδίας.* (*b*) *σφῷν μὲν ἔστι πόλις.* (*c*) *κατθανοῦσαν εὖ περιστελεῖν.* (*d*) *σφῷν ὀνασθαι.* (*e*) *ζηλωτὸν ἀνθρώποισι.*

5. Parse the following words :—*ἀνασχεθεῖν, ἐξεθρεψάμην, ἐμόχθουν, ὄλωλε, αἰδέσει, λάθοι, ἀναλοῖς, ἀγῆλαι, σφέ, μετέγνων, σέθεν, σφῷν.*

6. Explain the meaning of the following :—(1) *πεσσοὺς προσελθών.* (2) *κυανέας Συμπληγάδας.* (3) *ἀμφιπύλου μελάθρου.* (4) *πέμπειν ξυμβολά.* 5) *πομπαῖος ἄνα.* (6) *τένοντ' ἐς ὀρθὸν ὄμμασιν σκοπουμένη.* (7) *ἐγγὺς ἀρκύων ξίφους.* (8) *πρὸς βαλβῖδα βίου.*

7. Illustrate the different meanings of the following, according as their accentuation and, in the case of some, breathings or quantities differ :—*εια, παρα, σιγα, καλων, κακης, ανα, οιος, αγγειλαι, φυγας, κυνει.*

8. Explain the processes called *Elision* and *Crasis*, and give examples in *ἐπὶ ἑτέρῳ, καὶ αὐτός, ὁ ἀνήρ.* (*b*) Give the equivalents of—*ἐγῴμαι, ἐμοὐστι, κᾆτα.*

9. Write down the scheme (1) of the Iambic Trimeter Acatalectic; and, (2) of the Anapaestic Dimeter Acatalectic, indicating the isochronous feet. Scan the last four verses of ext. (A) and the following :—

αἰαῖ,
ἔπαθον τλάμων ἔπαθον μεγάλων
ἄξι' ὀδυρμῶν· ὦ κατάρατοι
παῖδες ὄλοισθε στυγερᾶς ματρὸς
ξὺν πατρὶ, καὶ πᾶς ἔρροι.

THIRD YEAR.

GREEK.—SOPHOCLES.—ELECTRA.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 12,

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A)

ἐγὼ γὰρ ἡνίχ' ἱκόμην τὸ Πυθικὸν
μαντεῖον, ὡς μάθοιμ' ὅτῳ τρόπῳ πατρὸς
δίκας ἀροίμην τῶν φονευσάντων πάρα,
χρῇ μοι τοιαῦθ' ὁ Φοῖβος ὧν πεύσει τάχα·
ἄσκευον αὐτὸν ἀσπίδων τε καὶ στρατοῦ
δόλοισι κλέψαι χειρὸς ἐνδίκους σφαγάς.
ὅτ' οὖν τοιόνδε χρησμὸν εἰσηκούσαμεν,
σὺ μὲν μολὼν, ὅταν σε καιρὸς εἰσάγῃ,
δόμων ἔσω τῶνδ', ἴσθι πᾶν τὸ δρώμενον,
ὅπως ἂν εἰδὼς ἡμὶν ἀγγείλῃς σαφῆ.
οὐ γάρ σε μὴ γήρᾳ τε καὶ χρόνῳ μακρῷ
γνῶσ' οὐδ' ὑποπτεύσουσιν ὡδ' ἡνθισμένον.
λόγῳ δὲ χρῶ τοιῷδ', ὅτι ξένος μὲν εἶ
Φωκεὺς, παρ' ἀνδρὸς Φανοτέως ἥκων· ὁ γὰρ
μέγιστος αὐτοῖς τυγχάνει δορυξένων.
ἀγγελλε δ' ὅρκον προστιθεὶς ὀθούνεκα
τέθνηκ' Ὀρέστης ἐξ ἀναγκαίας τύχης,
ἀθλοισι Πυθικοῖσιν ἐκ τροχηλάτων
δίφρων κυλισθείς· ὡδ' ὁ μῦθος ἑστάτω.

B ΠΑ. ξέναι γυναῖκες, πῶς ἂν εἰδείην σαφῶς
εἰ τοῦ τυράννου δώματ' Αἰγίσθου τάδε;
ΧΟ. τάδ' ἐστὶν, ὦ ξέν'. αὐτὸς ἥκασας καλῶς.
ΠΑ. ἦ καὶ δάμαρτα τήνδ' ἐπεικάζων κυρῶ
κείνου; πρέπει γὰρ ὡς τύραννος εἰσορᾶν.
ΧΟ. μάλιστα πάντων. ἥδε σοι κείνη πάρα.
ΠΑ. ὦ χαῖρ', ἄνασσα. σοὶ φέρων ἥκω λόγους
ἡδεῖς φίλου παρ' ἀνδρὸς Αἰγίσθῳ θ' ὁμοῦ.
ΚΛ. ἐδεξάμην τὸ ῥηθέν· εἰδέναι δέ σου
πρώτιστα χρῄζῶ τίς σ' ἀπέστειλεν βροτῶν.
ΠΑ. Φανοτεὺς ὁ Φωκεὺς πρᾶγμα πορσύνων μέγα.
ΚΛ. τὸ ποῖον, ὦ ξέν'; εἰπέ. παρὰ φίλου γὰρ ὢν
ἀνδρὸς, σάφ' οἶδα, προσφιλεῖς λέξεις λόγους.
ΠΑ. τέθνηκ' Ὀρέστης. ἐν βραχεῖ ξυνθεὶς λέγω.
ΗΛ. οἰ 'γὼ τάλαιν', ὀλωλα τῆδ' ἐν ἡμέρᾳ.
ΚΛ. τί φῂς, τί φῂς, ὦ ξεῖνε; μὴ ταύτης κλύε.

ΠΑ. θανόντ' Ὀρέστην νῦν τε καὶ πάλαι λέγω.
ΗΑ. ἀπωλόμην δύστηνος, οὐδέν εἰμ' ἔτι.
ΚΑ. σὺ μὲν τὰ σαυτῆς πρᾶσσ', ἐμοὶ δὲ σὺ, ξένε,
τἀληθὲς εἰπὲ, τῷ τρόπῳ διόλλυται.

2. Translate the following extt., adding an explanatory note on the grammar or interpretation where you deem such to be needed :—

(*a*) στάντες δ' ὅθ' αὐτοὺς οἱ τεταγμένοι βραβῆς
κλήρους ἔπηλαν καὶ κατέστησαν δίφρους.
(*b*) φείδοντο κέντρων οὐδέν, ὡς ὑπερβάλοι
χνόας τις αὐτῶν καὶ φρυάγμαθ' ἱππικά.
(*c*) ἀλλ' (δὸς) ὧδέ μ' ἀεὶ ζῶσαν ἀβλαβεῖ βίῳ
δόμους Ἀτρειδῶν σκῆπτρά τ' ἀμφέπειν τάδε,
φίλοισί τε ξυνοῦσαν οἷς ξύνειμι νῦν
εὐημεροῦσαν καὶ τέκνων ὅσων ἐμοὶ
δύσνοια μὴ πρόσεστιν ἡ λύπη πικρά.
(*d*) τίνος ποινὰς τὰ πολλὰ πνεύματ' ἔσχ' ἐν Αὐλίδι.

3. Explain the etymology and meaning, as carefully as you can, of the following :—*εὐμαρής, ἀλιπαρῆ, μιάστορα, κροτητῶν, ἀψεγές, καιρός, ἐκπαγλα, ἠθάς, ἀντίσταθμον, βάξιν.*

4. Write explanatory notes on :—(1) *πλεῖν ὑφειμένῃ.* (2) *ἐμασχαλίσθη.* 3) *τῷ παλαμναίῳ.* (4) *τὸ κλεινὸν Ἑλλάδος πρόσχημ' ἀγῶνος.* (5) *δισσῶν ὀνείρων.* (6) *δεξιὸν σειραῖον ἵππον.* (7) *δρ..ων διαύλων.*

5. Explain the following forms of verbs :—*ᾄδη, λύει, πελᾶν, ἀραρεν, παρεῖτο, ἐπηλαν, χρῇ, πεύσει, ἠρμένοι, ἐπηράσω, πέφηνεν, ᾔξαν.*

6. (*a*) Explain the force of *οὐ μή*, and state the difference in meaning when used with the *Fut. Ind.* and the *Aor. Subj.* (*b*) Distinguish between *ὅρα μὴ τιθῇ* (Dindorf), and *ὅρα μὴ τίθης* (Wunder).

7. *καὶ ταῦτα τηλικοῦτος* (Electra).—How do you explain this peculiarity of gender? (*b*) Comment on the quantity and accent of *ἡμὶν* in vs. 10 of ext. (A). (*c*) Give the equivalents of:—*κἂν, χὠ, ἀγώ, τἀν, ἀθρήνεις, κᾆτα.*

8. (*a*) Give the name and scheme of the metre of ext. (A). (*b*) Scan, giving the name and scheme of the metre :—

ὦ φάος ἀγνὸν
καὶ γῆς ἰσόμοιρ' ἀὴρ, ὥς μοι
πολλὰς μὲν θρήνων ᾠδὰς,
πολλὰς δ' ἀντήρεις ἦσθου
στέρνων πλαγὰς αἱμασσομένων.

9. (*a*) Write a sketch of the life of Sophocles. (*b*) Point out the leading characteristics and peculiar excellences of his dramas.

B. A. ORDINARY EXAMINATION.

THURSDAY, APRIL 15TH:—MORNING, 9 TO 12.

GREEK. – { THUCYDIDES, BOOK VII.
{ AESCHYLUS, PROMETHEUS VINCTUS,

Examiners, ... { REV. GRORGE CORNISH, LL.D.
{ REV. GEORGE WEIR, M.A.

(A) Τὰ μὲν πρότερον πραχθέντα, ὦ Ἀθηναῖοι, ἐν ἄλλαις πολλαῖς ἐπιστολαῖς ἴστε· νῦν δὲ καιρὸς οὐχ ἥσσον μαθόντας ὑμᾶς ἐν ᾧ ἐσμὲν βουλεύσασθαι. κρατησάντων γὰρ ἡμῶν μάχαις ταῖς πλείοσι Συρακοσίους ἐφ' οὓς ἐπέμφθημεν καὶ τὰ τείχη οἰκοδομησαμένων ἐν οἷσπερ νῦν ἐσμέν, ἦλθε Γύλιππος ὁ Λακεδαιμόνιος στρατιὰν ἔχων ἔκ τε Πελοποννήσου καὶ τῶν ἐν Σικελίᾳ πόλεων ἔστιν ὧν. καὶ μάχῃ τῇ μὲν πρώτῃ νικᾶται ὑφ' ἡμῶν, τῇ δ' ὑστεραίᾳ ἱππεῦσί τε πολλοῖς καὶ ἀκοντισταῖς βιασθέντες ἀνεχωρήσαμεν ἐς τὰ τείχη. νῦν οὖν ἡμεῖς μὲν παυσάμενοι τοῦ περιτειχισμοῦ διὰ τὸ πλῆθος τῶν ἐναντίων ἡσυχάζομεν (οὐδὲ γὰρ ξυμπάσῃ τῇ στρατιᾷ δυναίμεθ' ἂν χρήσασθαι ἀπαναλωκυίας τῆς φυλακῆς τῶν τειχῶν μέρος τι τοῦ ὁπλιτικοῦ), οἱ δὲ παρῳκοδομήκασιν ἡμῖν τεῖχος ἁπλοῦν, ὥστε μὴ εἶναι ἔτι περιτειχίσαι αὐτούς, ἢν μή τις τὸ παρατείχισμα τοῦτο πολλῇ στρατιᾷ ἐπελθὼν ἕλῃ. ξυμβέβηκέ τε πολιορκεῖν δοκοῦντας ἡμᾶς ἄλλους αὐτοὺς μᾶλλον, ὅσα γε κατὰ γῆν, τοῦτο πάσχειν· οὐδὲ γὰρ τῆς χώρας ἐπὶ πολὺ διὰ τοὺς ἱππέας ἐξερχόμεθα.

(B) Οἱ δὲ Συρακόσιοι τόν τε λιμένα εὐθὺς παρέπλεον ἀδεῶς καὶ τὸ στόμα αὐτοῦ διενοοῦντο κλῆσειν, ὅπως μηκέτι, μηδ' εἰ βούλοιντο, λάθοιεν αὐτοὺς οἱ Ἀθηναῖοι ἐκπλεύσαντες. οὐ γὰρ περὶ τοῦ αὐτοὶ σωθῆναι μόνον ἔτι τὴν ἐπιμέλειαν ἐποιοῦντο, ἀλλὰ καὶ ὅπως ἐκείνους κωλύσωσι, νομίζοντες, ὅπερ ἦν, ἀπό τε τῶν παρόντων πολὺ σφῶν καθυπέρτερα τὰ πράγματα εἶναι καί, εἰ δύναιντο κρατῆσαι Ἀθηναίων τε καὶ τῶν ξυμμάχων καὶ κατὰ γῆν καὶ κατὰ θάλασσαν, καλὸν σφίσιν ἐς τοὺς Ἕλληνας τὸ ἀγώνισμα φανεῖσθαι· τούς τε γὰρ ἄλλους Ἕλληνας εὐθὺς τοὺς μὲν ἐλευθεροῦσθαι, τοὺς δὲ φόβου ἀπολύεσθαι (οὐ γὰρ ἔτι δυνατὴν ἔσεσθαι τὴν ὑπόλοιπον Ἀθηναίων δύναμιν τὸν ὕστερον ἐπενεχθησόμενον πόλεμον ἐνεγκεῖν), καὶ αὐτοὶ δόξαντες αὐτῶν αἴτιοι εἶναι ὑπό τε τῶν ἄλλων ἀνθρώπων καὶ ὑπὸ τῶν ἔπειτα πολὺ θαυμασθήσεσθαι. καὶ ἦν δὲ ἄξιος ὁ ἀγὼν κατά τε ταῦτα καὶ ὅτι οὐχὶ Ἀθηναίων μόνον περιεγίγνοντο, ἀλλὰ καὶ τῶν ἄλλων πολλῶν ξυμμάχων, καὶ οὐδ' αὐτοὶ αὖ μόνον, ἀλλὰ καὶ μετὰ τῶν ξυμβοηθησάντων σφίσιν, ἡγεμόνες τε γενόμενοι μετὰ Κορινθίων καὶ Λακεδαιμονίων, καὶ τὴν σφετέραν πόλιν ἐμπαρασχόντες προκινδυνεῦσαί τε καὶ τοῦ ναυτικοῦ μέγα μέρος προκόψαντες. ἔθνη γὰρ πλεῖστα δὴ ἐπὶ μίαν πόλιν ταύτην ξυνῆλθε, πλήν γε δὴ τοῦ ξύμπαντος ὄχλου τοῦ ἐν τῷδε πολέμῳ πρὸς τὴν Ἀθηναίων τε πόλιν καὶ Λακεδαμονίων.

2. Translate the following extracts, adding an explanatory note on the construction where you deem it necessary:—

(*a*) *συνέβη δὲ τοῖς Κρησί, τὴν Γέλαν Ῥοδίοις ξυγκτίσαντας μὴ ξὺν τοῖς ἀποίκοις ἀλλ' ἐπὶ τοὺς ἀποίκους ἀκοντας μετὰ μισθοῦ ἐλθεῖν.* (*b*) *Ἰταλιωτῶν δὲ Θούριοι καὶ Μεταπόντιοι, ἐν τοιαύταις ἀνάγκαις τότε στασιωτικῶν καιρῶν κατειλημμένων, ξυνεστράτευον.* (*c*) *οἱ Κροτωνιᾶται προσπέμψαντες εἶπον οὐκ ἂν σφίσι βουλομένοις εἶναι διὰ τῆς γῆς σφῶν τὸν στράτον ἰέναι.*

3. Explain the terms:—

(1) *διάβροχοι.* (2) *θαλασσεύουασι.* (3) *διαψῦξαι.* (4) *ἐπωτίδες.* (5) *παρεξειρεσία.* (6) *ἀντήριδες.* (7) *Σπαρτιάτην.* (8) *Νεοδαμώδεις.* (6) *Εἵλωτας.* (10) *ναῦν μυριοφόρον.*

4. Translate:—

(C) ΠΡ. *ἦ μὴν ἔτ' ἐμοῦ, καίπερ κρατεραῖς*
ἐν γυιοπέδαις αἰκιζομένου,
χρείαν ἕξει μακάρων πρύτανις,
δεῖξαι τὸ νέον βούλευμ' ὑφ' ὅτου
σκῆπτρον τιμάς τ' ἀποσυλᾶται.
καί μ' οὐτι μελιγλώσσοις πειθοῦς
ἐπαοιδαῖσιν
θέλξει, στερεάς τ' οὔποτ' ἀπειλὰς
πτήξας τόδ' ἐγὼ καταμηνύσω,
πρὶν ἂν ἐξ ἀγρίων δεσμῶν χαλάσῃ,
ποινάς τε τίνειν
τῆσδ' αἰκίας ἐθελήσῃ.

ΧΟ. *σὺ μὲν θρασύς τε καὶ πικραῖς*
δύαισιν οὐδὲν ἐπιχαλᾷς,
ἄγαν δ' ἐλευθεροστομεῖς.
ἐμὰς δὲ φρένας ἐρέθισε διάτορος φόβος·
δέδια δ' ἀμφὶ σαῖς τύχαις,
πᾶ ποτε τῶνδε πόνων
χρή σε τέρμα κέλσαντ' ἐσιδεῖν. *ἀκίχητα γὰρ ἤθεα καὶ κέαρ*
ἀπαράμυθον ἔχει Κρόνου παῖς.

ΠΡ. *οἶδ' ὅτι τραχὺς καὶ παρ' ἑαυτῷ*
τὸ δίκαιον ἔχων Ζεύς· ἀλλ' ἔμπας
μαλακογνώμων
ἔσται ποθ', ὅταν ταύτῃ ῥαισθῇ·
τὴν δ' ἀτέραμνον στορέσας ὀργὴν
εἰς ἀρθμὸν ἐμοὶ καὶ φιλότητα
σπεύδων σπεύδοντι ποθ' ἥξει.

(D) ΠΡ. *ἦ μὴν ἔτι Ζεὺς, καίπερ αὐθάδη φρονῶν,*
ἔσται ταπεινὸς, τοῖον ἐξαρτύεται
γάμον γαμεῖν, ὃς αὐτὸν ἐκ τυραννίδος
θρόνων τ' ἄϊστον ἐκβαλεῖ· πατρὸς δ' ἀρὰ
Κρόνου τότ' ἤδη παντελῶς κρανθήσεται,
ἣν ἐκπίτνων ἠρᾶτο δηναιῶν θρόνων.

τοιῶνδε μόχθων ἐκτροπὴν οὐδεὶς θεῶν
δύναιτ' ἂν αὐτῷ πλὴν ἐμοῦ δεῖξαι σαφῶς.
ἐγὼ τάδ' οἶδα χὠ τρόπῳ. πρὸς ταῦτά νυν
θαρσῶν καθήσθω τοῖς πεδαρσίοις κτύποις
πιστὸς, τινάσσων τ' ἐν χεροῖν πύρπνουν βέλος.
οὐδὲν γὰρ αὐτῷ ταῦτ' ἐπαρκέσει τὸ μὴ οὐ
πεσεῖν ἀτίμως πτώματ' οὐκ ἀνασχετά·
τοῖον παλαιστὴν νῦν παρασκευάζεται
ἐπ' αὐτὸς αὐτῷ, δυσμαχώτατον τέρας·
ὃς δὴ κεραυνοῦ κρείσσον' εὑρήσει φλόγα,
βροντάς θ' ὑπερβάλλοντα καρτερὸν κτύπον·
θαλασσίαν τε γῆς τινάκτειραν νόσον
τρίαιναν, αἰχμὴν τὴν Ποσειδῶνος, σκεδᾷ.
πταίσας δὲ τῷδε πρὸς κακῷ μαθήσεται
ὅσον τό τ' ἄρχειν καὶ τὸ δουλεύειν δίχα.

5. (*a*) Write down the full name and scheme of the metre of vss. 1-12 of ext. (C), and scan the first four vss. (*b*) Explain the cause of the Doric dialect being used in the choruses of the Attic drama.

6. Parse and construe the following, giving the principal parts of the verbs, and the etymology with the English of each word:—
αὐθάδη, γάμον, ἄϊστον, ἐκβαλεῖ, κρανθήσεται, οἶδα, χὠ, πεσεῖν, σκεδᾷ, ἀδεῶς, σωθῆναι, φανεῖσθαι, ἐπενεχθησόμενον, θαυμασθήσεσθαι.

7. Give a brief sketch of Æschylus' life, stating how many plays he wrote, how many are extant, and what were the most remarkable improvements which he introduced into Tragedy.

8. Characterize Thucydides' style and qualities as a Historian.

9. Give an account of the origin, date, duration, and leading States on both sides, of the Peloponnesian war.

FIRST YEAR.

LATIN.—CICERO.—SELECT LETTERS.

FRIDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate:—

(A)

De Tadiana re, mecum Tadius locutus est te ita scripsisse, nihil esse iam quod laboraretur, quoniam hereditas usu capta esset. Id mirabamur te

ignorare, de tutela legitima, in qua dicitur esse puella, nihil usu capi posse. *Epiroticam emptionem* gaudeo tibi placere. Quae tibi mandavi et quae tu intelleges convenire *nostro Tusculano*, velim, ut scribis, cures, quod sine molestia, tua facere poteris; nam nos ex omnibus molestiis et laboribus uno illo in loco conquiescimus. Q. fratrem cotidie exspectamus. Terentia magnos articulorum dolores habet; et te et sororem tuam et matrem maxime diligit salutemque tibi plurinam ascribit et Tulliola, deliciae nostrae. Cura ut valeas et nos ames et tibi persuadeas te a me fraterne amari.

(B)

Ceteros iam nosti, qui ita sunt stulti, ut amissa re publica piscinas suas fore salvas sperare videantur. Unus est, qui curet constantia magis et integritate, quam, ut mihi videtur, consilio aut ingenio, Cato, qui *miseros publicanos*, quos habuit amantissimos sui, tertium iam mensem vexat neque iis a senatu responsum dari patitur: ita nos cogimur reliquis de rebus nihil decernere ante, quam publicanis responsum sit; qua re etiam legationes reiectum iri puto. Nunc vides, quibus fluctibus iactemur, et, si ex iis, quae scripsimus tanta, etiam a me non scripta perspicis, revise nos aliquando et, quamquam sunt haec fugienda, quo te voco, tamen fac ut amorem nostrum tanti aestimes, ut eo vel cum his molestiis pervenire velis; nam, *ne absens censeare*, curabo edicendum et proponendum locis omnibus; *sub lustrum* autem censeri germani negotiatoris est. Qua re cura, ut te quam primum videamus. Vale. Kal. Febr. Q. Metello L. Afranio coss.

2. Explain the meaning of the words in Italics in the above extracts.

3. Translate as carefully as you can the following extracts, and explain the construction of the words in Italics:—

(1) Cumque eo tempore *invidia annonae*, inimici non solum tui, verum etiam amicorum tuorum, iniquitas totius judicii multaque alia vel publicae vitia plus quam causa ipsa veritasque *valuissent*, *Publio tuo* neque *opera* neque *consilio* neque *labore*, neque *gratia* neque *testimonio* defui.

(2) Sic habeto, non *tibi majori* esse *curae*, ut iste tuus a me discessus quam fructuosissimus *tibi sit* quam *mihi*.

(3) *Cui* si aliquid erit, ne *egeat*, *mediocri virtute* opus est et *mediocri fortuna*, ut cetera consequantur.

4. Parse the following:—Moveare, vererere, comperisse, delata sunt, abisset, prodesset, luxerunt, deliquisse, exegero, decesse, relaxaro, cogitaram.

5. Write down the *Nom. Sing.* and *Plu.* of:—loco, arbitratu, otii, jure, locis, praesentibus, superficiem, dolori.

6. Give as accurately as you can the meaning and derivation of:—cautio, palimpsesto, contio, fabellam, prudentia, hospita, versura, andabata, sagis, putidiusculi, camino, tabellarios.

7. (*a*) Decline :—Lepus, lepor, potus, unus, quis. (*b*) Write down the (1st sing.) *Imperf. Subjunct.*, *Perf. Indic.*, *Fut. Indic.*, with the supine of:—parĕre, parēre, lavare, haurire. (*c*) State the fundamental distinction between the *Genitive* and *Ablative*, and name their leading uses.

8. Translate into Latin :—

(1) After calling an assembly Cæsar delivered a speech, in which he gave information touching his plans, and exhorted his men to be brave. (2) The army proceeded by forced marches from Capua to Rome, which city they reached in a very short time, and after six days they departed for Brundisium. (3) He was a man of the greatest integrity, courage and foresight, always ready to help his friends and benefit the state, and therefore he was held in high esteem by all.

FIRST YEAR.

HISTORY.—HISTORY OF GREECE AND ROME.

MONDAY, APRIL 5TH :—MORNING, 9 TO 12.

Examiner,.. .....REV. GEORGE CORNISH, LL.D.

1. By what name did the Greeks designate themselves and their country? Whence come the terms *Greeks* and *Greece?* Where were the *Cyclades* and *Sporades?* Give the meaning and derivation of these names.

2. Write a sketch of the government and popular institutions of the Spartans. Who were the Helots?

3. What political factions existed in Attica prior to the legislation of Solon? Give a summary of the changes and improvements that were effected by his legislation.

4. Name the colonies that were founded by the Greeks :—(1) on the West coast of Asia Minor, (2) in Sicily, and (3) in Southern Italy.

5. Give an account, with dates, of the origin and principal events of the Persian Wars.

6. Narrate the legend of Romulus and Remus.

7. Give an account of the political reforms ascribed to Servius Tullius.

8. What causes led to the struggles between the Patricians and the Plebeians? What were the general results of the contention?

9. How many years did Hannibal continue in Italy, and what signal defeats did he inflict upon the Romans?

10. What events are connected with the names of Lucius Junius Brutus, Camillus, Coriolanus, Fabius Cunctator? Give dates.

INTERMEDIATE EXAMINATION.

LATIN.—HORACE.—EPISTLES, BOOK II., AND ARS POETICA.

FRIDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, M.A.

1. Translate:—

(A)

Romae nutriri mihi contigit, atque doceri,
iratus *Graiis* quantum *nocuisset* Achilles.
Adiecere bonae paullo plus artis Athenae,
scilicet ut possem *curvo* dignoscere rectum,
atque inter silvas Academi quaerere verum.
Dura sed emovere *loco* me tempora *grato*,
civilisque rudem *belli* tulit aestus in arma,
Caesaris Augusti non responsura *lacertis*.
Unde simul primum me dimisere Philippi,
decisis humilem *pennis*, inopemque paterni
et Laris et fundi, paupertas impulit audax,
ut versus facerem; sed, quod non desit, habentem
quae poterunt umquam satis expurgare cicutae,
ni melius dormire putem, quam scribere versus?

(B)

Qui didicit, patriae quid debeat, et quid amicis,
quo sit *amore* parens, quo frater amandus et hospes,
quod sit conscripti, quod iudicis officium, quae
partes in bellum missi ducis; ille profecto
reddere personae scit convenientia cuique.
Respicere exemplar vitae morumque iubebo
doctum imitatorem, et vivas hinc ducere voces.
Interdum speciosa locis morataque recte
fabula, *nullius Veneris*, sine pondere et arte
valdius oblectat populum meliusque moratur,
quam versus inopes rerum nugaeque canorae.
Graiis ingenium, Graiis dedit ore rotundo
Musa loqui, praeter laudem nullius avaris.
Romani pueri longis rationibus assem
discunt in partes centum diducere. Dicat
filius Albini: si de quincunce remota est
uncia, quid superat? *Poteras* dixisse: triens.
Eu!
rem poteris servare tuam. Redit uncia, quid fit?
Semis.—An, haec animos aerugo et cura peculi
quum semel imbuerit, speramus carmina fingi
posse *linenda* cedro et levi servanda cupresso?

2. Translate the following extracts, adding an explanatory note (grammatical) where you deem it to be necessary :—

(1) Urit enim fulgore suo qui praegravat artes
Infra se positas; extinctus amabitur idem.

(2) Sic fautor veterum ut tabulas peccare vetantes
Quas bis quinque viri sanxerunt, foedera regum
Vel Gabiis vel cum rigidis aequata Sabinis,
Pontificum libros, annosa volumina vatum,
Dictitet Albano Musas in monte locutas.

(3) Ut primum positis nugari Graecia bellis
Coepit et in vitium fortuna labier aequa,
Nunc athletarum studiis, nunc arsit equorum.

(4) Romae dulce diu fuit et solemne reclusa
Mane domo vigilare, clienti promere jura,
Cautos nominibus rectis expendere nummos.

4. Explain carefully the construction of the words in Italics in extracts (A) and (B).

5. Write explanatory notes on the following:—

(1) Quas bis quinque viri sanxerunt. (2) Pontificum libros. (3) Ratione ruentis acervi (What figure?). (4) Numerus Saturnius. (5) Bis dena super sestertia. (6) Nocturnos lemures. (7) Omne tulit punctum. (8) Triste bidental. (9) Sosiis. (10) Praetextas vel togatas.

6. Give as accurately as you can the etymology and meaning of the following words, noting cognate forms, if any, in Greek or English:—Fautor, trutina, fastos, plagosum, obscoenis, pugiles, vehemens, caelatum, munia, temeti, dumtaxat, ampullas.

7. Parse the following words —Labier, arsit, adstricto, oblitus, rescieris, cecidere, sequere, sodes, mŏrata, mŏrata, ĕmendas, ēmendas.

8. Instance archaic forms and *ἅπαξ λεγόμενα* used by Horace.

9. Write a sketch of the life of Horace, commenting particularly on the personal references in extract (A).

INTERMEDIATE EXAMINATION.

MONDAY, APRIL 5TH :—MORNING, 9 TO 12.

LATIN PROSE COMPOSITION.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, M.A.

Translate into Latin :—

(A)

Tarquinius Superbus being driven from Rome, in consequence of his cruelties, retired to Clusium, to beg the assistance of Porsena, who was at that time the most powerful prince of Italy. Porsena, who gave the exiled monarch a kind reception, first sent ambassadors to demand that the Romans should receive Tarquinius back into the city; and upon this being refused, he denounced war against them. Accordingly he marched a great army towards Rome, expecting soon to reduce it, but, on his arrival at the Sublician bridge, he saw the Romans drawn up to oppose him. Not doubting, however, that, being superior in numbers, he would easily overpower them, he immediately prepared to join battle.

(B) Cæsar sent the news of this signal triumph to Rome, and the senate, after reading his despatch, decreed with acclamation a supplicatio, or national thanksgiving to the gods. Cato rose indignantly to deprecate the bestowal of such honors on an occasion so unworthy. He denounced the conduct of Cæsar as perfidious and degrading to the Roman name. He described his treatment of the Germans as a violation of the pledged faith of the republic:—he declared that Cæsar ought to be given up to the Germans in expiation of the national crime. Examples of such a course were not altogether wanting.

THIRD YEAR.

LATIN.—PLAUTUS.—AULULARIA.

MONDAY, APRIL 12TH :—MORNING, 9 TO 1.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate into English :—

(A)

ME. Quid nunc? etiam mihi despondes filiam? EU. Illis legibus, cum illa dote, quam tibi dixi. ME. Sponden' ergo? EU. Spondeo. ME. Di bene vortant! EU. Ita di faxint! Illud facito ut memineris convenisse, ut ne quid dotis mea ad te afferret filia.
ME. Memini. EU. At scio, quo vos soleatis pacto perplexarier: pactum non pactum est, non pactum pactum est, quod vobis lubet.

ME. Nulla controversia mihi tecum erit. Sed, nuptias
hodie quin faciamus, numqua causa? EU. Imo edepol optuma.
ME. Ibo igitur; parabo. Numquid me vis? EU. Istuc. ME. Fiet. Vale.
Heus, Strobile, sequere propere me ad macellum strenue.
EU. Illic hinc abiit. Di immortales, obsecro, aurum quid valet!
Credo ego illum iam inaudivisse, mi esse thesaurum domi:
id inhiat; ea affinitatem hanc obstinavit gratia.

(B)

EU. Fidé censebam maxumam multo fidem:
sed éa sublevit os mihi penissume.
Ni subvenisset corvos, periissém miser.
Nimis hércle ego illum corvom, ad me veniat, velim,
qui indicium fecit, ut ego illi aliquid boni
dicam: nam quod edit, tam duim, quam perduim.
Nunc, hoc ubi abstrudam, cogito solum locum.
Silvani lucus extra murum est avius,
crebro salicto oppletus; ibi sumam locum.
Certum est, Silvano potius credam, quam Fide.
STR. Euge, euge, di me salvom et servatum volunt!
Iam ego illuc praecurram atque inscendam aliquam in arborem,
et inde observabo, aurum ubi abstrudat senex.
Quamquam hic manere me erus sese iusserat,
certum est malam rem potius quaeram cum lucro.

2. Translate carefully the following extracts adding an explanatory note on any peculiarity of construction:—(*a*) Nam hic apud nos nihil est aliud quaesti furibus. (*b*) Ita aequomst, quod in rem utrique arbitremur, et mihi te et tibi me consulere et monere. (*c*) Hau decorum facinus tuis factis facis, ut inopem atque innoxium abs te atque abs tuis me inrideas, (*d*) Quam ad probos propinquitate proxume te adjunxeris, tam optumumst. (*e*) Quid tibi meam tactio?

3. Write explanatory notes on the meaning of the following phrases:—(1) Exemi ex manu manubrium. (2) Foris crepuit. (3) Sublevit os. (4) Abstinebit cenatione bubula. (5) Disputata est ratio. (6) Quam volsus ludiust. (7) Trium litterarum homo. (8) Cocus nundinalist. (9) Scribam dicam.

4. Explain the following words, both as to meaning and derivation:—Salutigerulos, aurifex, ciniflones, patagiarii, flammearii, propolæ, manuleariі, phylacistæ, bellum, edepol, mecastor, secus.

5. (*a*) Parse, and give the ordinary forms of:—Med, scibas, duim, Fide, mutassis, ausim, fuat, faxint, respexis, face, cedo, sis, afferrier. (*b*) What were the original terminations of the Perf. Subj. and the Fut. Perf?

6. Explain the formation and meaning of the following:—Unde, clam, pessum, frugi, foras, illuc, quin, palam, actutum, eccum, sicubi, quasi.

7. Give the scheme and name of the metre of extract (B), and scan the first four verses.

8. (*a*) Write a sketch of the life of Plautus, and name the other Roman writers of Dramatic Literature. (*b*) To what department of Greek Literature, and of what period, were they indebted for the plots and characters of their plays?

9. Translate into Latin :—

Marcus Livius, after returning from the Illyrian war, was accused of dividing the enemy's spoils unjustly, and was condemned by a sentence of the whole people ;—a disgrace which he took so much amiss that he not only retired into the country, but also, for upwards of eight years, avoided all intercourse with men. At length he was prevailed on to return to the city, and was offered the consulship. When all urged him to accept this office, he is said to have spoken thus :—"If I am worthy of being raised to this honour, why were you so unjust as to condemn me. If, on the other hand, I was deservedly punished, do you think that I ought to be again entrusted with power?" The Senators bade him remember, that it was the part of a good citizen to forget the injuries inflicted by a fickle people; and Livius was at length induced to become the colleague of Caius Claudius.

B. A. ORDINARY EXAMINATION.

FRIDAY, APRIL 16TH :—MORNING, 9 TO 12.

LATIN. { TACITUS.—ANNALS, BOOK I.
PLAUTUS.—ANALURIA.

Examiners,..... { REV. GEORGE CORNISH, LL.D.
REV. GEORGE WEIR, M.A.

1. Translate :—

(A) Nam senem Augustum devinxerat adeo, uti nepotem unicum, Agrippam Postumum, in insulam Planasiam proiecerit, rudem sane bonarum artium et robore corporis stolide ferocem, nullius tamen flagitii conpertum. At hercule Germanicum Druso ortum octo apud Rhenum legionibus inposuit adscirique per adoptionem a Tiberio iussit, quamquam esset in domo Tiberii filius iuvenis, sed quo pluribus munimentis insisteret. Bellum ea tempestate nullum nisi adversus Germanos supererat, abolendae magis infamiae ob amissum cum Quintilio Varo exercitum quam cupidine proferendi imperii aut dignum ob praemium. Domi res tranquillae, eadem magistratuum vocabula ; iuniores post Actiacam victoriam, etiam senes plerique inter bella civium nati : quotus quisque reliquus qui rem publicam vidisset?

(B) Fama dediti benigneque excepti Segestis vulgata, ut quibusque bellum invitis aut cupientibus erat, spe vel dolore accipitur. Arminium super in-

sitam violentiam rapta uxor, subiectus servitio uxoris uterus vaecordem agebant; volitabatque per Cheruscos, arma in Segestem, arma in Caesarem poscens. neque probris temperabat. egregium patrem, magnum imperatorem, fortem exercitum, quorum tot manus unam mulierculam avexerint. sibi tres legiones, totidem legatos procubuisse. non enim se proditione neque adversus feminas gravidas, sed palam adversus armatos bellum tractare. cerni adhuc Germanorum in lucis signa Romana, quae dis patriis suspenderit. coleret Segestes victam ripam, redderet filio sacerdotium hostium: Germanos numquam satis excusaturos, quod inter Albim et Rhenum virgas et secures et togam viderint. aliis gentibus ignorantia imperii Romani inexperta esse supplicia, nescia tributa; quae quoniam exuerint, inritusque discesserit ille inter numina dicatus Augustus, ille delectus Tiberius, ne inperitum adulescentulum, ne seditiosum exercitum pavescerent. si patriam parentes antiqua mallent quam dominos et colonias novas, Arminium potius gloriae ac libertatis quam Segestem flagitiosae servitutis ducem sequerentur.

2. Translate the following extracts, adding an explanatory note, grammatical or otherwise, where you deem it to be needed :—

(*a*) Mederetur fessis, neu mortem in isdem laboribus, sed finem tam exercitae militiae neque inopem requiem orabant.

(*b*) Pergere ad Treviros et externae fidei.

(*c*) Segestes discors manebat, auctis privatim odiis, quod Arminius filiam ejus alii pactam uapuerat, gener invisus inimici soceri.

(*d*) Accendebat haec Sejanus, peritia morum Tiberii odia in longum jaciens, quae reconderet auctaque promeret.

3. Explain the meaning of the following military terms:—pila, agger, vallum, vallus, fossa, porta decumana, signa et aquilae, vexillarii.

4. (*a*) In extract (B) how would *redderet* and *sequerentur* be expressed in *oratio recta?* (*b*) Name the date of the events of Book I. of the Annals. (*c*) Mention the leading peculiarities of style and syntax in Tacitus.

5. Translate :—

(C)

EU. Nunc défaecato démum animo egredior domo,
postquam perspexi, salva esse intus omnia.
Redi nunc iam intro atque intus serva. STA. Quippini!
ego intus servem? An, né quis aedis aufera^?
Nam hic apud nos nihil est aliud quaesti furibus:
ita inaniis sunt oppletae, atque araneis.
EU. Mirum, quin tua me causa faciat Iupiter
Philippum regem aut Darium, trivenefica!
Araneas mihi ego illas servari volo.
Paupér sum, fateor: patior. Quod di dant, fero.
Abi intro! occlude ianuam! Iam ego hic ero.

Cave quémquam alienum in aédis intromiseris.
Quod quispiam ignem quaérat: extingui volo,
ne causae quid sit, quod te quisquam quaéritet.
Nam si ignis vivet, tu éxstinguére extémpulo.
Tum aquam aufugisse dicito, si quis petet.
Cultrum, securim, pistillum, mortarium,
quae uténda vasa sémper vicini rogant,
furés venisse, atque abstulisse dicito.
Profécto in aedis méas me absente néminem
volo intromitti; atque étiam hoc praedico tibi:
si Bona Fortuna véniat, ne intromiseris.
STA. Pol ea ipsa, credo, ne intromittatur, cavet:
nam ad aedis nostras nusquam adit, quanquam prope est.
EU. Tace atque abi intro. STA. Taceo atque abeo. EU. Occlude, sis
forés ambobus péssulis. Iam ego hic ero.

(D)

EU. Tu modo cave quoiquam indicassis, aurum meum esse istic, Fides:
non metuo, ne quisquam inveniat: ita probe in latebris situm est.
Edepol nae illic pulcram praedam agat, si qui illam invénerit
aulam onustam auri. Verum id te quaéso ut prohibéssis, Fides.
Nunc lavabo, ut rém divinam faciam; ne affinem morer,
quin, ubi arcessat, meam extemplo filiam ducat domum.
Vide, Fides, etiam atque etiam nunc, salvam ut aulam abs te auferam!
tuae fide concrédidi aurum; in tuo luco et fano ést situm.—
STR. Di immortales, quod ego hunc hominem facinus audio éloqui,
se aulam onustam auri abstrusisse hic intus in fano! Fides,
cave tu illi fidélis, quaeso, potius fueris, quam mihi!
Atque hic pater est, ut ego opinor, huius, herus meus quam amat.
Ibo hinc intro: pérscrutabor fanum, si inveniam uspiam
aurum, dum hic est occupatus. Séd si reperero, o Fides,
mulsi congialem plenam faciam tibi fidéliam;
id adeo tibi faciam: verum ego mihi bibam, id ubi fécero.

6. (*a*) Explain the distinction between *foris crepuit* and *fores pulsavit*. (*b*) "Philippum regem aut Darium:"—explain the reference. (*c*) "Rem divinam faciam":—express in Greek. (*d*) Trivenefica, trifurcifer:—explain the formation. (*d*) Tuae *fide* (Extract D):—what case?

7. Give the derivation and meaning of:—Caupones, patagiarii, calceolarii, diabathrarii, flammarii, phylacistæ, limbularii, arcularii.

8. Enumerate archaic forms used by Plautus, giving in each case the equivalent ordinary form.

B.A. ORDINARY EXAMINATION.

FRIDAY, APRIL 16TH:—AFTERNOON, 2 TO 4.

LATIN PROSE COMPOSITION.

Examiners,..... { REV. GEORGE CORNISH, LL.D. / REV. GEORGE WEIR, M.A.

Translate into Latin:—

(A) The Etruscans, having found that they were not a match for the Romans in the field of battle, begged for a truce, which was given them for two years. Before this truce had expired they again took up arms and were preparing to march into the Roman territory, when they were told that a great body of Gauls had been seen on the confines of Etruria. So great an enmity did the Etruscans bear to the Roman Republic, that they did not repel these new antagonists; but, on the contrary, asked them to go with them to attack Rome. The Gauls, who were poor, willingly accepted the money that was offered them, but it is well known that, on that occasion, they did not fight with the Romans nor approach the city.

(B) The sea to the west of Europe and Africa was from early times called the Atlantic, from Mount Atlas, which was supposed to dominate the west of Africa, and from the mythological being with which it was associated: and was also called the sea outside the pillars of Hercules, or simply the *mare externum*. By some Latin writers, especially poets, it is called Oceanus. For a long time it was considered not to be navigable, for the western regions were regarded as shrouded in clouds and darkness; but as early as 500 B. C. a Carthaginian expedition under Hanno explored the coast for a considerable distance to the south, while another penetrated north as far as Britain.

THIRD YEAR EXAMINATION FOR HONOURS IN CLASSICS.

GREEK.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts, adding an explanatory note where you deem it necessary:—

(A) Herodotus, Book VIII, chaps. 35 and 36.

2. Parse carefully the following words, giving Attic equivalents of such as are not Attic:—*ὁρμέατο, ἀπέργοντες, ἐνέπρησαν, ἀποσχισθέντες, ἀποδέξαιεν, ἠπίστατο, οἰκίοισι, ἀπίκατο, κατεστεῶτες, ἔα, φάς, ἀνηνείκαντο.*

3. (*a*) τὸ Κωρύκιον ἄντρον:—Why so named, and where was it? (*b*) Give an account of the dialect, style, and historical value of the writings of Herodotus.

4. Translate:—
(B) Xenophon, Hellenics, Book I., chap. 4, §§ 16 to 20, inclusive.

5. Write explanatory notes on the following from Book II.:—(*a*) ἀπὸ τῆς ὥρας ἐτρέφοντο (i. § 1). (*b*) ὅτι οὐ διέωσαν διὰ τῆς κόρης τὰς χεῖρας (*ib.* 8). (*c*) παρετάξαντο ἐν μετώπῳ (*ib.* 23). (*d*) τῶν μακρῶν τειχῶν * * * ἑκατέρου (ii. § 15). (*e*) ἀπὸ συκοφαντίας ζῶντας (iii. § 12). (*f*) κόθορνος ἐπικαλεῖται (*ib.* 31). (*g*) ἀποβλέπει ἐπ' ἀμφοτερων—ἀμφότερον (*ib.*). (Discuss the meanings and the readings.) (*h*) ἐπὶ τὸι κωφὸν λιμένα (iv. § 31.

6. Translate:—
(C) Sophocles, Antigone, vss. 955–987.

7. (*a*) Analyze the metres of, and scan, strophe β (966–76) in ext. (C). (*b*) Construe carefully the same strophe, discussing the meaning of παρὰ (Mss.), πάρα (Jelf, suggestion), πὰρ (Wunder, conj.). (*c*) Write notes on the legendary references of ext. (C). (*d*) Give the derivation and meaning of:—[illegible]όν, ἀλαστόροισιν, ἄμιππος, ἀγχίπτολις, εὔϊον, κατάφαρκτος, (Vulg. κατάφρακτος), δέμας. (*e*) ἐψαυσας ἀλγεινοτάτας ἐμοὶ μερίμνας. κεῖνος ἐπέγνω μανίαις ψαύων τὸν θεόν:—Explain these constructions with ψαύειν. κεῖ τις ἡ σοφός (710).—Explain this use of εἰ with the *Subj.* (*f*) vs. 71, ἀλλ' ἴσθ' ὁποία—ὁποῖά—ὁποίᾳ—σοι δοκεῖ:—Distinguish between these variants. Also between Βορέας and Βορεάς, giving the *Gen.* of each.

7. Translate:—
(D) Theocritus, Idyl, IV., vss. 1–22.

8. (*a*) Give Attic for the Doric forms in the above text. (*b*) Explain and give examples of the *Bucolic Caesura.* (*c*) Give an account of the language and character of the poem of Theocritus.

LATIN.

MONDAY, APRIL 26TH :—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, adding an explanatory note where you deem it necessary, the following passages :—

(A) Tacitus, Histories I., chap. lii.

2. (*a*) Write short explanatory notes on :—(1) *Cum cura* adierat. (2) Adlevatae *notae*. (3) Sine judicio *donaret* sua. (4) *Tanquam* * * * ingrate *tulisset*. (5) *Panderet sinum*. (6) Hibernis legionum propius *miscentur*. (7) *Sacramento* adactae. (8) Ceteri consulatus ex destinatione Neronis aut Galbae mansere. (*b*) Define the positions, and give modern names where you can, of the following :—Rubrum mare, Forum Julium, Magnetes a Sipylo, Insula Planasia, Lugdunensis colonia, Colonia Agrippinensis, Divodurum, Treveri, Aventicum, Mutina. (*c*) Characterize the style of Tacitus, enumerate his writings, and distinguish between *Annales* and *Historiae*.

3. Translate :—

(B) Persius, Sat. V., vss. 19-29 ; VI., 43-55.

4. (*a*) "*Pullatis*" :—give the variant and translate accordingly. (*b*) Write explanatory notes on the following :—(1) Insulso Glyconi. (2) Camena. (3) Suburra. (4) Candidus umbo. (5) Fruge Cleanthea. (6) Tesserula. (7) Tressis agaso. (8) Satyrum Bathyllli. (9) Lubrica Coa. (10) Cor Enni. (11) Sapere hoc maris expers. (12) Exossatus ager. (*c*) Characterise the style of Persius. Whom did he take as his model ?

5 Translate :—

(C) Juvenal, Sat. X., vss. 147-167.

6. (*a*) In what respects are this account and estimate of Hannibal faulty, and to what would you attribute this ? (*b*) Explain :—(1) Pila, cohortes, egregios equites et castra domestica. (2) Totis Quinquatribus. (3) Gabiorum potestas. (4) Si Nurtia Tusco favisset. (5) Defossa in loculis quos sportula fecit amicos. (*c*) Give the difference in meaning of the following various readings :—(Sat. VIII.) (*a*) *Humeroque—humerosque* minorem. (*b*) *Fumosos—famosos* magistros. (*c*) *Corythae—coryphaei*. (*d*) *Torvum—robum* juvencum. (*e*) Metues ne tu *sis—sic*—Creticus. (*f*) Molam versare *Nepotis—nepotes*. (*g*) Mitte *ostia—Ostia* Cæsar.

7. Translate :—

(D) Horace, Satires, Book I., Sat. VI., vss. 56-70.

8. Point out what were the leading characteristics of the three Roman Satirists above mentioned, and what were their relative excellences. With

what known writer did Satire, as developed by Horace and Juvenal, originate? Whence the term *Satira?*

9. Translate:—

"Histrio in terra Graecia fuit fama celebri, qui gestus et uocis claritudine et uenustate ceteris antistabat; nomen fuisse aiunt Polum: tragoedias poetarum nobilium scite atque asseuerate actitauit. Is Polus unice amatum filium morte amisit. Eum luctum quoniam satis visus est eluxisse, rediit ad quaestum artis. In eo tempore Athenis Electram Sophoclis acturus gestare urnam quasi cum Oresti ossibus debebat. Ita compositum fabulae argumentum est, ut ueluti fratris reliquias ferens Electra comploret commisereaturque interitum eius existimatur. Igitur Polus lugubri habitu Electrae indutus, ossa atque urnam e sepulchro tulit filii et, quasi Oresti amplexus, oppleuit omnia non simulacris neque imitamentis, sed luctu atque lamentis ueris et spirantibus. Itaque cum agi fabula uideretur, dolor actus est." *Aulus Gellius.*

GREEK AND LATIN PROSE COMPOSITION.

FRIDAY, APRIL 23RD:—AFTERNOON, 2 TO 5.

Examiner,..... REV. GEORGE CORNISH, LL.D.

(A) Translate into Greek:—

In the Persian wars the Greeks had for the first time to fight as one people against a foreign foe. The Greeks beat back the Persians. After this great victory Greece was safer, and the Greek cities everywhere became more prosperous. One result of the Persian wars was to make the Greeks in Sicily and Asia, and all over the world, feel that they were one people with the same interests. Another result was to make Athens the most popular and powerful city in Greece. The people of Attica were the most gifted of the Ionian race, and the political importance of Athens now gave a large opening to the Athenian genius.

(B) Translate into Latin:—

Besides Homer, another great poet was named in Greek tradition as the founder of an epic school. This was Hesiod. What is known of his life is gathered chiefly from the poems ascribed to him. His father Dius had come from Kyme, a town of Æolis in Asia Minor, to the old home of the Æolians in Greece Proper, and had settled on an upland farm at the village of Ascra, near Mount Helicon, in Bœotia. Poverty is said to have been his reason. He found, perhaps, that he could not make his way in the busy commercial world of Asia Minor, and resolved to retire to a quiet farmer's life in the old country, where at least a subsistence was secure. Hesiod grumbles that

Ascra was dreary in winter, sultry in summer, good at no season, but he seems to be unjust to the fertile and well-watered region. Here he fed his father's sheep on Mount Helicon, and began his work as poet. Later in life he is said to have removed to Naupactus on the Gulf of Corinth in Locris, thus passing from Æolian to Dorian surroundings; and the Dorian influence has left traces in his work. He was murdered at Oenoe in Locris, and buried at Naupactus, whence his remains were transferred in later times to the Bœotian Orchomenus.

GREEK AND ROMAN HISTORY.

MONDAY, APRIL 26TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. What is the date of the first Olympiad, and how do you reduce the Olympiads to years B. C.?

2. Explain the geographical distribution of the Æolians, Dorians, and Ionians.

3. The causes of the early superiority of the Ionic Colonies in Asia Minor over the mother-country in poetical, philosophical, and historical literature.

4. The principal causes that operated to prevent the Greeks from becoming a united political community.

5. Give a succinct account of Xerxes' expedition against Greece; and describe the conduct of the several Hellenic nations at the time.

6. "Philological research teaches us to distinguish three primitive Italian stocks" (Mommsen):—Name these stocks, and give an account of the earliest inhabitants of Italy. Which of these three stocks became the dominant race of Italy?

7. State the leading features of the original political and social constitution of Rome.

8. What was the real character and object of the *Leges Agrariae* at Rome? Define the terms *Ager publicus* and *Possessio*.

9. Trace the most important political events and constitutional changes at Rome, with dates, from the period of the expulsion of the Kings down to the Punic wars.

10. What were the functions of the Roman *Pontifices*? Give the origin of the name.

B. A. EXAMINATION FOR HONOURS IN CLASSICS.

GREEK POETS.

WEDNESDAY, MARCH 31ST:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, with an explanatory note when you deem it necessary:—

(A) Aeschylus, Prometheus Vinctus, vss. 707–728.

(B) Aeschylus, Seven against Thebes, vss. 722–735.

2. (*a*) In ext. (A) Hermann reads *τρέψασα*, for *στρέψασα*, and *ἐξηρτημένοι* for *ἐξηρτυμένοι*:—Discuss these readings and show which are preferable. (*b*) Explain the syntax of:—(1) *Σκύθας ἀφίξει.* (2) *οἷς μὴ πελάζειν.* (3) *λειᾶς χειρός.* (4) *πρόσπλατοι ξένοις.* (5) *πρὶν ἂν μόλῃς.* (*c*) Write explanatory notes on the following geographical references:—*Σκύθας νομάδας. σιδηροτέκτονες Χάλυβες. ὑβριστὴν ποταμόν. Ἀμαζόνων στρατόν. Σαλμυδησσία γνάθος. Χάλυβος Σκυθῶν ἄποικος.*

3. Translate:—

(C) Sophocles, Antigone, vss. 955–987.

4. (*a*) Analyze the metres of, and scan, strophe *β* (966–76) in ext. (C). (*b*) Construe carefully the same strophe, discussing the meaning of *παρὰ* (Mss.), *πάρα* (Jelf, suggestion), *πὰρ* (Wunder, conj.) (*c*) Write notes on the legendary references of ext. (C). (*d*) Give the derivation and meaning of:—*ἀλαόν, ἀλαστόροισιν, ἀμιππος, ἀγχίπτολις εὐῖον, κατάφαρκτος,* (Vulg. *κατάφρακτος*), *δέμας.* (*e*) *ἐψαυσας ἀλγεινοτάτας ἐμοὶ μερίμνας. κεῖνος ἐπέγνω μανίαις ψαύων τὸν θεόν*:—Explain these constructions with *ψαύειν. κεἴ τις ἦ σοφός* (710):—Explain this use of *εἰ* with the *Subj.* (*f*) vs. 71, *ἀλλ' ἴσθ' ὁποία—ὁποῖά—ὁποίᾳ—σοι δοκεῖ*:—Distinguish between these variants. Also between *Βορέας* and *Βορεάς*, giving the *Gen.* of each.

5. Translate:—

(D) Euripides, Hippolytus, vss. 88–107.

6. (*a*) Give as accurately as you can the import of the particles *ἆρα, καὶ κάρτα γέ, ἦ γάρ, πῶς οὖν, ἦ καί.* (*b*) Explain the terms *πρόλογος, πάροδος, στάσιμον, ἐπεισόδιον,* and *κομμός*, in their dramatic usage.

7. Translate:—

(E) Aristophanes, The Frogs, vss. 718–733.

8. (*a*) Give the scheme of the metre and scan the first two vss. of ext. (E). (*b*) By what term was that part of the play from which the above ext. is taken designated? (*c*) Explain the following references and expressions:—(1) *Κιμωλίας γῆς*. (2) *τοὺς καλούς τε ἀγαθούς*. (3) *κεκιβδηλευμένοις*. (4) *εὐγενεῖς* (express this in Latin). (5) *προυσελοῦμεν*. (6) *φαρμακοῖσιν*.

9. Translate:—
(F) Pindar, Olympia, X. (XI.)

10. (*a*) *ἀρχαὶ τέλλεται*:—explain this construction. (*b*) Write a short note on the style and dialect of Pindar, and illustrate from the above ext.

11. Translate:—
(G) Theocritus. Idyl, IV., vss. 1-22.

12. (*a*) Give Attic for the Doric forms in the above ext. (*b*) Explain and give examples of the *Bucolic Caesura*. (*c*) Give a short account of Theocritus.

13. Translate:—
(H) Hesiod, Works and Days, vss. 223-235.
(I) Homer, Odyssey, Bk. I., vss. 252-266.

14. Parse and derive the following words:—*τέθηλε, μεμηλότα, ζείδωρος, ὦ πόποι, Δᾶν, ψέ, πρόσπλατοι, μόλῃς, ἀγνῶτα, ἐτάθη, ἄγκειται, ἀνήμεροι*.

GREEK PROSE WRITERS.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate adding an explanatory note where you deem it necessary:—

(A) Demosthenes, DeCorona, page 225 (Ed. Tauchnitz), *Φιλίππῳ μὲν ἦν συμφέρον* down to *τοῦτ' ἐγράφη*.

(B) Aeschines, Contra Ctesiphontem, §§ 152–153 (Ed. Teubner), inclusive.

2. (*a*) Explain carefully the meaning of the following references in the above extt.:—(1) *ἀκαλλιερήτων τῶν ἱερῶν*. (2) *τοῖς δραπέταις ποσί*. (3) *ἐγκωμιάζειν τὴν ἐκείνων ἀρετήν*. (4) *ἐν τῷ δικαστηρίῳ*. (5) *τὸ ψήφισμα*. (6) *βουλεύων*. (7) *θέαν μὴ κατανεῖμαι*. (8) *ἐν τοῖν δυοῖν ὀβολοῖν*. (*b*)

Give the days of the month, according to our mode of reckoning, indicated by the following:—*ἑνῃ καὶ νέᾳ: δεκάτῃ ἀπίοντος: ἕκτῃ ἱσταμένου: τρίτῃ ἐπὶ δέκα.* What is the meaning of the first, and why was it used? (*c*) Name the dates of the delivery of these orations, severally. What were the strong points in the indictment of Aeschines, and how did Demosthenes deal with them.

3. Translate:—

(C) Plato, De Republica, Book I., chap. 12, §§ C to E, inclusive.

(D) Aristotle, De Poetica, chap. 14, §§ 1 to 5, inclusive.

4. (*a*) Ext. (D):—*ἐστι τὸ φοβερὸν * * * καὶ ποιητοῦ ἀμείνονος.*—What Greek Tragedians would you instance in illustration of this criticism? (*b*) Cite from the Frogs of Aristophanes in reference to the censure *ἐκ τῆς ὄψεως.*

5. Translate:—

(E) Thucydides, Book I., Chap. 23 (*τὴν πρόφασιν*, § 8:—Explain this use of the Accus.).

(F) Herodotus, Book IX., Chap. 89.

(G) Xenophon, Hellenics, Book I., Chap. 4, §§ 16 to 20, inclusive.

6. (*a*) Write short notes explanatory of the references to political and physical occurrences in ext. (E). (*b*) Write a critique on the style of Thucydides, pointing out his grammatical and rhetorical peculiarities. (*c*) What is the relative value of Thucydides and Herodotus as historical authorities? On what grounds is their respective value to be estimated?

7. Write explanatory notes on the following from Hellenics Book II.:—(*a*) *ἀπὸ τῆς ὥρας ἐτρέφοντο* (i. § 1). (*b*) *ὅτι οὐ διέωσαν διὰ τῆς κόρης τὰς χεῖρας* (*ib.* 8). (*c*) *τῶν μακρῶν τειχῶν * * * ἑκατέρου* (ii. § 15). (What does Thucydides say about the Long Walls?) (*d*) *ἀπὸ συκοφαντίας ζῶντας* (iii. § 12). (*e*) *κόθορνος ἐπικαλεῖται* (ib. 31). (Illustrate from Aristophanes). (*f*) *ἀποβλέπει ἐπ' ἀμφοτερων—ἀμφότερον* (*ib.*). (Discuss the meanings and the readings.) (*g*) *ἐπὶ τὸν κωφὸν λιμένα* (iv. § 31.)

LATIN POETS.

WEDNESDAY, MARCH 31ST:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

1. Translate, adding an explanatory note where you may deem it necessary on any peculiar form or construction:—

(A) Persius, Sat. V., vss. 19-29; VI., 43-55.

2. (*a*) "*Pullatis*":—give the variant and translate accordingly. (*b*) Write explanatory notes on the following:—(1) Insulso Glyconi. (2) Camena. (3) Suburra. (4) Candidus umbo. (5) Fruge Cleauthea. (6) Tesserula. (7) Tressis agaso. (8) Satyrum Bathylli. (9) Lubrica Coa. (10) Cor Enni. (11) Sapere hoc maris expers. (12) Exossatus ager. (*c*) Characterise the style of Persius. Whom did he take as his model?

3. Translate:—

(B) Juvenal, Sat. X., vss. 147-167.

4. (*a*) In what respects are this account and estimate of Hannibal faulty, and to what would you attribute this? (*b*) Explain:—(1) Pila, cohortes, egregios equites et castra domestica. (2) Totis Quinquatribus. (3) Gabiorum potestas. (4) Si Nurtia Tusco favisset. (5) Defossa in loculis quos sportula fecit amicos. (*c*) Give the difference in meaning of the following various readings:—(Sat. VIII.) (*a*) *Humeroque—humerosque* minorem. (*b*) *Fumosos—famosos* magistros. (*c*) *Corythae—coryphaei.* (*d*) *Torvum—robum* juvencum. (*e*) Metues ne tu *sis—sic*—Creticus. (*f*) Molam versare *Nepotis—nepotes.* (*g*) Mitte *ostia—Ostia* Cæsar.

5. Translate:—

(C) Horace, Satires, Book I., Sat. VI., vss. 56-80.

6. Point out what were the leading characteristics of the three Roman Satirists above-mentioned, and what were their relative excellences. With what known writer did Satire, as developed by Horace and Juvenal, originate? Whence the term *Satira?*

7. Translate:—

(D) Plautus, Aulularia, Act. IV., sc. 1.

(E) Terence, Adelphi, Act V., sc. 9, vss. 1-21.

8. (*a*) (1) In ext. (D), how would you fill up the lacuna in "*abeat tanquam* * * * *"?* (2) *Censione bubula*:—explain the meaning, giving the derivation. (3) Sine *omni* suspitione; quid agant *arbitrarier*:—comment on peculiarities of usage. (*b*) Write down the name and scale of the metre, and scan vss. 1-4 of ext. (D).

9. Translate:—

(F) Virgil, Æneid, Bk. IV., vss. 173-197.

10. Give the derivation and meaning of the following words:—Frugi, pessum, seorsum, triscurria, naulum, procerem, cachinni, vervecum, pusilli, induperator, equidem, Dama, bruma, caballis.

LATIN PROSE WRITERS.

THURSDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. Translate the following extracts into English, adding a brief comment where any peculiar form or construction seems to you to require it:—

(A) Tacitus, Annals, Book II., chap. lx.

2. Write explanatory notes, grammatical or otherwise, as the case may be, on the following:—(*a*) Petita in fiscum. (*b*) Liberalitate decies sestertii. (*c*) Missus paci firmator. (*d*) Aegypto remeans. (*e*) Proficisitur cognoscendæ antiquitatis. (*f*) Laetus animi. (*g*) Idistaviso. (*h*) Jus perorandi.

3. Translate:—

(B) Tacitus, Histories I., chap. lii.

4. (*a*) Write short explanatory notes on:—(1) *Cum cura* adierat (2) Adlevatae *notae*. (3) Sine judicio *donaret* sua. (4) *Tanquam* * * * ingrate *tulisset*. (5) *Panderet sinum*. (6) Hibernis legionum propius *miscentur*. (7) *Sacramento* adactae. (8) Ceteri consulatus ex destinatione Neronis aut Galbae mansere. (*b*) Define the positions, and give modern names where you can, of the following:—Rubrum mare, Forum Julium-Magnetes a Sipylo, Insula Planasia, Lugdunensis colonia, Colonia Agrippinensis, Divodurum, Treveri, Aventicum, Mutina. (*c*) Characterize the style of Tacitus, enumerate his writings, and distinguish between *Annales* and *Historiae*.

(C) Livy, Book XXII., chap. xlvi.

5. Ext. (C):—(*a*) *Peditibus* firmata;—explain the case. *Crederes*;—explain the usage. (*b*) Give the date and locality of the battle here described. Was it followed by any important consequences? (*c*) Explain the following extracts from Book XXI.:—(1) Inter motum Africae. (2) Praerogativam militarem. (3) Agmine quadrato. (4) Dum vulnus ducis *curaretur*. (Why subjunct?) (5) Nono die in jugum Alpium perventum est. What part of the Alps? What is Livy's route, and how does it differ from that of Polybius? (6) Lectisternium. (7) Supplicatio. (8) Libros adire.

6. Translate:—

(D) Cicero, De Imp. Cn. Pomp. chap. iv.

7. (*a*) Narrate the date, object, and result of the delivery of this oration. By what other name is it designated, and why? (*b*) Explain the following:—(1) Ex portu, ex decumis, ex scriptura, vectigal. (2) Jus legationis. (3) Socius populi Romani. (4) Duo reges imminent toti Asiæ.

8. Translate:—

(E) Cicero, De Officiis, Book III., chap. xxvi.

9. (*a*) From what poet is the passage in the above extract supposed to be cited? Give a short account of the object and argument of this treatise.

10. Translate:—

"Et quoniam (ut aiunt) dei facientes adjuvant, prius invocabo eos; nec, ut Homerus et Ennius, Musas, sed xii. deos consentis: neque tamen eos urbanos quorum imagines ad forum auratae stant, sex mares et feminae totidem, sed illos xii. deos qui maxime agricolarum duces sunt. Primum, qui. omnes fructus agriculturae caelo et terra continent, Jovem et Tellurem. Itaque quod ii parentes magni dicuntur, Iuppiter pater appellatur, Tellus terra mater. Secundo, solem et lunam, quorum tempora observantur, cum quaedam seruntur et conduntur. Tertio, Cererem et Liberum, quod horum fructus maxime necessarii ad victum. Quarto, Robigum et Floram, quibus propitiis neque robigo frumenta atqua arbores corrumpit, neque non tempestive florent. Itaque publicae Robigo feriae robigaria; Florae ludi floralia instituti."

Varro.

GREEK PROSE COMPOSITION.

THURSDAY, APRIL 8TH:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D.

Translate into Greek (accented):—

Amphion and Zethus being removed, Laius became king of Thebes. With him commences the ever-celebrated series of adventures of Œdipus and his family. Laius, forewarned by the oracle that any son whom he might beget would kill him, caused Œdipus as soon as he was born to be exposed on Mount Kithaeron. Here the herdsmen of Polybius, king of Corinth, accidentally found him, and conveyed him to their master, who brought him up as his own child. In spite of the kindest treatment, however, Œdipus when he grew up found himself exposed to taunts on the score of his unknown parentage, and went to Delphi to inquire of the god the name of his real father. He received for answer an admonition not to go back to his country; if he did so, it was his destiny to kill his father and become the husband of his mother. Knowing no other country but Corinth, he accordingly determined to keep away from that city, and quitted Delphi by the road towards Bœotia and Phokis. At the exact spot where the roads leading to these two countries forked, he met Laius in a chariot drawn by mules, when the insolence of one of the attendants brought on an angry quarrel, in which Œdipus killed Laius, not knowing him to be his father.

LATIN PROSE COMPOSITION.

FRIDAY, APRIL 23rd:—AFTERNOON, 2 TO 5.

Examiner,.....REV. GEORGE CORNISH, LL.D

Translate into Latin :—

The Greeks themselves, and all men till the end of the last century, were nearly unanimous in believing the Iliad and the Odyssey to be the work of of one poet, Homer. Homer is named in a spurious fragment of Hesiod, but the earliest authentic mention is in the philosopher and poet Xenophanes, who flourished about 510 B.C. The name Homerus means fitted together, and was the ordinary word for a *hostage*, i. e., a pledge *agreed upon* between two parties. But nothing was accurately known about his life or date. Most opinions placed Homer either in the time when the Ionian colonies in Asia Minor were founded (about 1044 B. C.), or within a century later. The Philosopher Aristotle, who wrote on Homer, and the Homeric critic Aristarchus, seem to have put him about 1044 B. C. The historian Herodotus (440 B. C.) differing, probably, from most of his own contemporaries, made Homer, along with Hesiod, live as late as 850 B.C. According to a Greek epigram, Homer was claimed as son by Smyrna, Chios, Colophon, Ithaca, Pylus, Argos, Athens. But all the best evidence connects Homer with Smyrna, an originally Æolian city which afterwards became Ionian. An ancient epithet for him is *Melesigenes*, 'son of Meles,' the name of a stream which flowed through old Smyrna, on the border between Æolis and Ionia. This is significant when we remember that the Iliad is an Ionian poem on Æolian themes. The unknown author of the 'Homeric' Hymn to Apollo of Delos speaks of himself as a blind old man living in Chios. The ancients thought that this hymn was by Homer, and thus the tradition of Homer's blindness was perpetuated. The little island Ios, one of the Cyclades, claimed to have Homer's grave.

HISTORY OF GREECE AND ROME.

MONDAY, APRIL 26TH:—MORNING, 9 TO 12.

Examiner, ...REV. GEORGE CORNISH, LL.D.

1. The geography and climate of ancient Greece, and their influence on the national character.

2. An account of the Pelasgi. What are Grote's views respecting them?

3. Discuss the causes of the early superiority of the Ionic Colonies in Asia Minor over the mother-country in poetical, philosophical, and historical literature.

4. Trace the growth of the Persian Empire, and point out the causes of its hostility to the Greeks.

5. Comment on the meaning and etymology of the term *Amphictyony*. Mention the principal Amphictyonies in Greek History. Define the terms *ἱερομνήμων* and *πυλάγοροι*.

6. Define the exact meaning of the terms *τυραννίς*, *ὀλιγαρχία*, and *δημοκρατία*, severally. What States would you adduce in illustration of them?

7. Give an account of the Athenian Confederacy after the Persian war, and show how it degenerated.

8. Give a summary of Mommsen's chapter on the *Earliest Migrations into Italy*.

9. Give an account of the legislative schemes of C. Sempronius Gracchus.

10. *Graecia capta ferum victorem cepit*:—Trace Greek influence in Roman literature, art and social life.

GENERAL PAPER.

MONDAY, APRIL 26TH:—AFTERNOON, 2 TO 5.

Examiner,..... .....REV. GEORGE CORNISH, LL.D.

1. (*a*) Give the principal rules, with examples and exceptions, for the accentuation of the Greek verb. (*b*) Accentuate, with the proper *spiritus*, the following ext.:—

Δρασω ταδ' · αλλα βαινε δωματων εσω,
και παισι πορσυν' οια χρη καθ' ημεραν.
ω τεκνα, σφων μεν εστι δη πολις
και δωμ', εν ω λιποντες αθλιαν εμε
οικησετ' αει μητρος εστερημενοι ·
εγω δ' ες αλλην γαιαν ειμι δη φυγας,
πριν σφων ονασθαι καπιδειν ενδαιμονας.

2. Write down the principal parts of the verbs *εἰμί*, *εἶμι*, *ἴημι*, and *οἶδα*.

3. Analyse the following grammatical forms:—*βίηφι*, *ἔσχον*, *ἀνωχθι*, *σύτο*, *ἐμολον*, ruri, rure, sicubi, ibi, aurai, divôm.

4. Distinguish Epic, Lyric, and Dramatic Poetry, and name Greek examples of each.

5. The origin and development of the Greek Drama.

6. Mark the quantity of the penult in maritimus, matutinus, posticus, mordicus, peritus, Ticinus, Hispanus, Alexandria, Britannia, Padus. Write a list of Latin words that differ in meaning according to difference in quantity.

7. Mommsen says: "Italy remained without national poetry, or art":—How far is this assertion too sweeping?

8. Mention the earliest Latin prose writers, and characterize their style of writing.

9. Give some account of Ennius, and of his place as a Poet and Historian in Roman Literature. In what sense can he rightly be called the Father of Latin Literature?

10. What evidence in regard to Latin pronunciation can be gathered from the writings of Plautus and Terence?

MATHEMATICS AND NATURAL PHILOSOPHY.

FIRST YEAR.

EUCLID—ARITHMETIC.

FRIDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D. / G. H. CHANDLER, M.A.

1. If four right lines be proportionals, the rectangle under the extremes is equal to the rectangle under the means.

a. The rectangle under the sides of any triangle is equal to the rectangle under the perpendicular on the base and the diameter of the circumscribed circle.

2. From a given circle cut off a segment containing an angle equal to two-thirds of a right angle.

3. Define a tangent to a circle, and state and prove the proposition of Book III. which enunciates the fundamental property of the tangent.

4. If a rectangular piece of land 284 feet long by 147 feet wide be sold for $14000, what is the cost per acre?

5. Reduce the mixed circulating decimal $.3\dot{6}5\dot{4}$ to a vulgar fraction, and verify the result.

6. Find to three places of decimals (1) the length of the diagonal of a square whose area is one square inch, and (2) the ratio of this length to that of the diameter of a circle having the same area.

7. Find the centre of a given circle.

8. Describe an isosceles triangle having each of the angles at the base double of the third angle.

9. If the sides of two triangles, about each of their angles, be proportionals, the triangles shall be equiangular to one another, and shall have those angles equal which are opposite to the homologous sides.

10. If two similar parallelograms have a common angle, and be similarly situated, they are about the same di meter.

11. What is the bank discount on a note for $614.30 due two months hence, discounting at 7 per cent?

12. A can do a piece of work in 7 days, which A and B working together can do in $4\frac{1}{2}$ days. In what time could B alone do it?

13. Divide $\overline{\text{MMDCLXC}}$ by $\frac{3}{5}$ of $\frac{5}{4}$.

FIRST YEAR.

TRIGONOMETRY—ALGEBRA.

MONDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, LL.D. / GEORGE H. CHANDLER, M.A.

1. If a right angle be taken as the unit of angular measure, find the number which will represent an angle of 35°.

2. The value of $\sin x$ is required from the equation

$$8 \sin x = 3 \cos^2 x$$

solve this as a quadratic equation with one unknown quantity.

3. Prove $\sin (A-B) = \sin A \cos B - \cos A \sin B$.

a. Hence show that $\sin 15° = \frac{\sqrt{3}-1}{2\sqrt{2}}$, previously investigating the numerical values of any trigonometrical ratios that may be necessary.

4. Solve the equations:—

(*a*). $\dfrac{\sqrt{a}+\sqrt{a-x}}{\sqrt{a}-\sqrt{a-x}}=\dfrac{1}{a}$;

(*b*). $\dfrac{3x-5y}{2}+3=\dfrac{2x+y}{5}$, $8-\dfrac{x-2y}{4}=\dfrac{x}{2}+\dfrac{y}{3}$;

(*c*.) $\dfrac{5x+3}{x-1}+\dfrac{2x-3}{2x-2}=9.$

5. Find the cube of $\dfrac{x}{a^2}-\dfrac{a^2}{x}$.

6. Reduce to its simplest form:—

$$\frac{1}{x-1}-\frac{1}{2(x+1)}-\frac{x+3}{2(x^2+1)}.$$

7. Prove the following relations:—

$$\sec^2 A=1+\tan^2 A,$$

$$\tan A=\frac{\sin A}{\sqrt{1-\sin^2 A}},$$

$$\frac{\sec A-1}{\sec A}=\text{versin } A,$$

$$\sin A=\cos\left(\frac{\pi}{2}-A\right)=\sin(\pi-A)$$

8. Given $\sec A=1.0\dot{3}$, find $\sin A$, $\tan A$, and $\text{versin } A$.

9. Prove that in any plane triangle

$$\frac{c}{a-b}=\frac{\sin\dfrac{A+B}{2}}{\sin\dfrac{A-B}{2}}.$$

10. The sides of a triangle are 72, 64.1, and 22.3 feet respectively. Find the area.

11. Find the greatest common measure of $x^3-6ax^2+12a^2x-8a^3$ and $x^4-4a^2x^2$.

12. Show that $\sqrt{12}$, $3\sqrt{75}$, $\frac{1}{2}\sqrt{147}$, $\frac{2}{3}\sqrt[4]{75}$, and $(144)^{-\frac{1}{4}}$ are similar surds.

13. A person sold a horse for £24, thereby losing as much per cent. as it cost. What was the prime cost?

INTERMEDIATE EXAMINATION.

EUCLID—ARITHMETIC.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiners, ... { ALEXANDER JOHNSON, LL.D.
REV. A. N MCQUARRIE, B.A.
GEORGE H. CHANDLER, M.A.

1. Construct a rectilinear figure similar to one given rectilinear figure and equal to another.

2. State Euclid's definition of proportion among four magnitudes, and prove that when the magnitudes are any two arcs of equal circles, and the two angles at the centres subtended by the arcs, they are proportional.

3. If two triangles are equiangular, the sides about the equal angles are proportionals, and those sides which are opposite the equal angles are homologous. Define homologous.

4. Cut a given straight line in extreme and mean ratio, first defining the term.

a. If the length of the line be 10 feet, find the length of the greater segment.

5. Inscribe in a given circle an equiangular and equilateral hexagon.

6. The rectangle contained by the diagonals of a quadrilateral figure inscribed in a circle is equal to the sum of the rectangles contained by its opposite sides.

7. The population of Great Britain in 1851 was 21,121,967, and the increase during the previous half century had been 93.47 per cent. What was the population in 1801?

8. A rectangular field, whose length is to its width as 4 to 3, contains 2 acres, 2 roods, 32 sq. perches, find its dimensions, explaining your method clearly.

9. Find the present value of $780 due 3 months hence, interest being reckoned at 6 per cent.

10. Square $\frac{1}{2}$, multiply half the result by 8, and divide the product by ·01.

11. If a straight line be divided into two equal, and also into two unequal parts, the squares on the two unequal parts are together double of the square on half the line, and of the square on the line between the points of section.

12. If a straight line touch a circle, and from the point of contact a straight line be drawn cutting the circle, the angles made by this line with

the line touching the circle are equal to the angles in the alternate segments of the circle.

13. At what rate per cent. will $700 amount to $1200 in 5 years, simple interest?

14. Deduct ·73 of 11 furlongs from $\frac{3}{7}$ of $\frac{4}{5}$ of $\frac{1}{3}$ of 70 miles.

INTERMEDIATE EXAMINATION.

TRIGONOMETRY—ALGEBRA.

MONDAY, APRIL 12TH:—MORNING, 9 to 12.

Examiners,..... { ALEXANDER JOHNSON, LL.D.
REV. A. N. MCQUARRIE, B.A.
GEORGE H. CHANDLER, M.A.

1. Given $tan\ A = \frac{1}{3}$, find *Sec A* and versin *A*.

2. In any triangle prove

$$Cos\ \tfrac{1}{2}\ A = \sqrt{\frac{s\ (s-a)}{b\ c}}$$

3. Assuming the diameter of the earth to be 7,926 miles, calculate the dip of the sea horizon as seen from a mountain 4 miles high.

4. Prove that the expression for any angle in circular measure can be converted into seconds by multiplying it by a constant number, and calculate the number.

5. Define a logarithm, and prove that the logarithm of the quotient of two numbers is equal to the difference of the logarithms of the numbers.

6. What convention is laid down in order to affix a meaning to such expressions as $a^{-\frac{1}{2}}$ and $b^{\frac{3}{8}}$? Adopting it, find what these denote, and find other expressions for them.

7. Solve the equations :—

$$\frac{x}{g} + \frac{y}{q} = \frac{a}{n}\ ,\quad x + y = a;$$

$$\frac{ax}{b\ (x+c)} + \frac{bx}{a\ (x+c)} = 1.$$

8. Simplify the expression :

$$\frac{(1+x)^{\frac{1}{2}} + (1-x)^{\frac{1}{2}}}{(1+x)^{\frac{1}{2}} - (1-x)^{\frac{1}{2}}}\ ,$$

first by rationalizing the numerator, and then by rationalizing the denominator; and then add together your two results.

9. Find the values of x and y from the simultaneous equations:

$$3^y = \frac{27}{3^x}, \quad 2^y = 2^x \times 4$$

10. Show that the sum of the cubes of any three consecutive numbers is divisible by three times the middle number.

11. Prove that $tan\,(A + B) = \dfrac{tan\,A + tan\,B}{1 - tan\,A\,tan\,B}$

a. Hence deduce the value of $tan\,2A$ and $tan\,(A - B)$.

12. A yacht is 5.8 nautical miles from the mouth of a harbour bearing S. b. W.; in order to reach the harbour she is obliged, by reason of a southerly wind, to make two courses, the first E. S. E., the other S. W. b. W., calculate the distance run in each course, and the whole time, the rate of sailing being 7 knots.

13. Find the sine of $1''$.

14. To find the distance of a column of cavalry, I ascertain with a micrometer that its vertical height subtends an angle of $4'$; if we assume the height of a mounted soldier to be 8 feet, what is the distance of the column?

15. Solve the equations:

$$\frac{7x+1}{x-1} = \frac{35}{9} \cdot \frac{x+4}{x+2} + 3\tfrac{4}{9},$$

$$\frac{2}{x+\sqrt{2-x^2}} + \frac{2}{x-\sqrt{2-x^2}} = x.$$

16. The plate of a looking-glass is 18 inches by 12, and it is to be framed with a frame of uniform width, whose area is to be equal to that of the glass; find the width of the frame.

THIRD YEAR.

HYDROSTATICS AND OPTICS.

THURSDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. A cubical box, the length of one of whose edges is 2 feet, is immersed in water, so that its upper side is horizontal and is 20 feet

below the surface of the water, find the pressure upon it and each of the other sides.

2. State and prove the principle of Archimedes.

a. Supposing the box in question 1 to be of wood whose sp. gr. is ·657 and to be one inch thick, find by this principle the ascensional force ; and compare the result with that obtained by considering the pressures on the sides.

3. Assuming that the weight in grains of a volume V of any gas is given by the formula

$$W = \frac{5.375\ V\ p\ s}{460 + t}$$

state the principles by which the weight of a volume of *moist* air may be derived from it, and thence calculate the weight of a cubic foot of moist air, when the barometer stands at 29.52, the thermometer at 56° Fah., the elastic force of the vapour being 0.402, and its sp. gr ·622.

a. Compare the result with the weight of the same volume of dry air at the same temperature and pressure.

4. A heavy body is suspended by a string from a fixed point. Is the pull on the string increased or diminished as the barometer rises ? Give reasons.

5. Describe the forcing pump, and explain its action.

6. Describe Nicholson's Hydrometer and the mode of using it ; and find the specific gravity of a mineral whose first and second weighings give 25.36 grs. and 102.33 grs., the standard weight being 300 grs.

7. Describe the Astronomical Telescope, and find its magnifying power.

8. Define the magnifying power of a pocket lens, and find it if the focal length be f for a person whose distance of distinct vision is d. Does a long-sighted or a short-sighted person gain most by the use of the lens ? Prove your answer from the formula.

9. A candle flame 1 inch in height is placed on the axis of, and at a distance of 3 inches from, a convex lens of 11 inches focal length ; at the distance of 3 inches behind the lens is a plane mirror ; a person looking through the lens at the mirror sees an image of the candle ;

account fully for this image, and find its position and magnitude, stating also whether it is real or virtual.

10. Find the dispersion produced by a prism of water of 4° angle, the dispersive power of water being .035 and its refractive index 1.336. Define *dispersive power*.

11. Light diverges from a point 11 inches in front of a concave mirror of 10 inches radius, find the conjugate focus. Prove the formula, if you employ it.

12. A ray of light falls nearly perpendicularly or perpendicularly on a thin prism of angle ε, prove that the deviation is

$$\delta = (\mu - 1)\,\varepsilon$$

N.B. Examine all three cases.

THIRD YEAR.

MECHANICS.

FRIDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. A ball falls in a vacuum from a height of 100 feet on a plane, find the height to which it will rebound, if the coeff. of elasticity be 0.836.

2. A ball is projected in a vacuum with a given velocity, prove that the maximum range on a horizontal plane corresponds to an elevation of 45°.

3. A weight of 1 lb., hanging vertically, pulls by means of a fine string a weight of 99 lbs. placed on a horizontal plane, find the space descended in 10 seconds, neglecting friction and the resistance of the air.

4. If 40 hodmen be employed on a building 30 feet high, to carry bricks to the masons, how many bricks will they raise in 7 hours, allowing 17 bricks to 125 lbs.: work done per man being 1,126 ft. lbs. per minute?

5. The velocity acquired by a body in running down any inclined plane is equal to the velocity acquired in falling down the height of the plane.

6. Define a constant force, and prove

$$v = f\,t \text{ and } v^2 = 2\,f\,s$$

assuming the relation between the space, time, and final velocity.

7. If a cylinder whose height is double the diameter of its base be resting

on a horizontal plane, and be tilted until it is on the point of upsetting, find the angle of inclination of the base to the horizon.

8. On a lever 3 feet in length a weight of 500 lbs is suspended at one end at $2\frac{2}{3}$ inches from the fulcrum, what weight at the other end will keep the lever in equilibrium, neglecting the weight of the lever?

9. Investigate a method for finding the true weight of a body by means of a balance of which the arms are unequal.

10. In the movable inclined plane the power is to the pressure on the movable plane as the height of the plane is to its length.

11. Two forces are inclined at an angle of 15°, one of them is 22 lbs. and the resultant is 56 lbs, find the other force.

12. Assuming that the resultant of two *commensurable* forces meeting at a point is in the direction of the diagonal of the parallelogram formed by the forces, show that the same is true for *incommensurable* forces.

B. A. ORDINARY EXAMINATION.

ASTRONOMY—OPTICS.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiners,..... } ALEXANDER JOHNSON, LL. D.
..... } REV. A. N. MCQUARRIE, B.A.

1. Investigate a method for finding the distance of the moon.

2. Explain, with the aid of diagrams, the relative lengths of day and night throughout the year at the following places: the equator; the pole; latitude 66° 32′ north; latitudes less than 66° 32′ north.

3. Account for the *phases* of the moon. What are the positions of the moon with regard to the sun, when she is *crescent*-shaped, and *gibbous* respectively?

4. Describe Newton's experiment showing the dispersion of light. (State the order of the colours from the *least* refrangible to the *most* refrangible).

5. A parallel beam of light falls on a spherical concave mirror of 28 inches radius and, after reflection, passes through a concave lens of 10 inches focal length, which is placed at a distance of 12 inches from the mirror; find the position of the conjugate focus, and whether the rays actually meet there or not; the axes of the mirror and the lens coinciding, and the beam being parallel to the axes.

6. State and prove the principle of Hadley's sextant.

7. Give Bode's law of planetary distances, and assuming the earth's distance (93,000,000) calculate the distance of Saturn.

8. Calculate the periodic time of Mercury, the interval between two inferior conjunctions being 115.88 days.

9. Describe the method of finding the latitude of *any* place on the earth's surface.

10. Determine the deviation of a ray of light incident nearly perpendicularly upon a prism of small angle.

11. An object 5 inches in diameter is placed at a distance of 14 inches from a convex lens of 7 inches focal length; find the position and magnitude of the image.

12. Describe the Galilean Telescope.

B.A. ORDINARY EXAMINATION.

MECHANICS—HYDROSTATICS.

MONDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiners,..... ..... { ALEXANDER JOHNSON, LL.D. / REV. A. N. MCQUARRIE, B.A.

1. If a force of 17 lbs. produce a velocity of 14 feet per second in a cubic foot of matter in one second, find the specific gravity of the body, assuming $g = 32{\cdot}1948$, and the weight of a cubic foot of water as 62·32 lbs.

2. For the simple pendulum prove

$$T = \pi \sqrt{\frac{l}{g}}$$

3. State the principle on which the equilibrium of a system of pulleys is determined, and apply it in the case of a *Burton* of the first kind, containing 5 cords, to find the ratio of the Power to the Resistance.

a. Compare the efficiency of the first and second kinds of Burtons, each having n cords.

4. Assuming that the weight (W) in grains of a volume (V) of gas is

$$W = \frac{5.375\ Vps.}{460 + t}$$

state the principles by which the weight of a volume of *moist air* may be derived from it, and thence calculate the weight of a cubic foot of moist air, when the barometer stands at 29.52, the thermometer at 56° Fah., the elastic force of the vapour being 0.402, and its sp. gr. .622.

a. Compare the result with the weight of the same volume of dry air at the same temperature and pressure.

5. Describe the suction pump, explaining its action. Determine the effective pressure on the piston. What is the greatest height to which water can be raised by it and why?

6. Two cubical masses of iron (sp. gr. = 7.25) and copper (sp. gr. = 8.9) are connected by a string passing over a pulley, and being completely immersed in water, are in equilibrium; the edge of the copper cube being 3.7 inches long, find the length of that of the iron cube.

7. If two forces meet at a point, their moments with respect to any point situated on their resultant are equal and opposite.

8. If the force required to draw a waggon on a horizontal road be $\frac{1}{20}$st part of the weight of the waggon; what will be the force required to draw it up a hill, the slope of which is 1 in 43?

9. Prove that the spaces described by a falling body in successive seconds are proportional to the series of odd numbers.

10. If the surface of a liquid subject to any forces whatever, be free, it must, at every point taken upon it, be perpendicular to the resultant of the forces which act upon that point.

11. State and illustrate Boyle and Mariotte's law.

12. Describe the Specific Gravity bottle and the manner of using it.

B. A. ORDINARY AND THIRD YEAR.

EXPERIMENTAL PHYSICS—LIGHT AND HEAT.

MONDAY, APRIL 5TH:—MORNING, 9 TO 12.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Describe experiments by which it may be shown that bodies have no colour of their own.

2. Explain the principle of the method by which the *protuberances* which appear round the sun in an eclipse are examined at other times.

3. How has it been ascertained that many of the *nebulæ* are masses of gas.

4. Define *interference*, and describe Fresnel's experiment with mirrors exhibiting the phenomena.

5. Explain the action of *Iceland spar* in breaking up a beam of light into two parts, and describe the results of passing these through another piece of Iceland spar.

6. How would you find experimentally the focal length of a convex lens?

7. A piece of iron weighing 60 ounces, and at a temperature of 100° C. is immersed in 180 ounces of water whose temperature is 19° C. The temperatures of the water and the iron become 22° C. Find the specific heat of the iron.

8. How much is the circumference of an iron wheel whose diameter is 6 feet increased, when its temperature is raised 400 degrees C., supposing the coeff. of expansion for 1° C. to be ·0000122 ?

9. A bar of wrought iron 1 inch square is fixed between two walls when the temperature is 20° Fah; what pressure will it exert if the temperature be raised to 96° Fah; the coeff. of expansion for 1° Fah. being ·00000642, and the modulus of elasticity being 29,000,000 lbs.

10. Define "boiling," and describe any experiment showing that the boiling point of water varies with the pressure. How is this principle used in finding the heights of mountains?

11. Describe any experiment showing that the radiation of heat from a warm body depends on the character of its surface.

12. A thin glass flask is filled with water and a glass tube is inserted in it so that the water ascends some way up the tube; the flask is then plunged in hot water; describe the effects on the column of water in the tube.

HONOUR EXAMINATIONS IN MATHEMATICS.

FIRST YEAR.

GEOMETRY.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 1.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. The locus of the pole of a variable tangent to a given circle, with respect to its centre as origin, is a concentric circle.

2. If a circle touch two given circles (the nature of the contacts being assigned) the polar of its centre, with respect to one of the given circles, always touches a given circle.

3. Any two points subtend at the centre of a circle an angle equal to that between their polars.

4. Describe a circle such that the radical axes of it and each of three given circles shall pass respectively through three given points.

5. Given three fixed straight lines meeting in a point, if the three vertices of a triangle move, one on each of these lines, and two sides of the triangle pass through fixed points, prove that the remaining side passes through a fixed point on the line joining the two given points.

6. If perpendiculars be drawn from any point on the circumference of a circle to the sides of an inscribed triangle, their feet shall be in the same straight line.

7. Straight lines are drawn from a given point to the circumference of a given circle and cut in a given ratio ; find the locus of the points of section.

8. Given the base and vertical angle of a triangle, find the locus of the centre of the inscribed circle.

9. The circle through the feet of the perpendiculars of a triangle bisects the sides of the triangle and the segments of the perpendiculars towards the angles.

10. Through a given point within a circle draw the minimum chord.

11. Given the base and sum of squares of the sides of a triangle, find the locus of the vertex.

12. The middle points of the three diagonals of a complete quadrilateral line in the same straight line.

FIRST YEAR.

ALGEBRA—THEORY OF EQUATIONS.

MONDAY, APRIL 26TH:—MORNING, 9 TO 1.

Examiner, ...ALEXANDER JOHNSON, LL.D.

1. Prove that if we substitute successively for x in $f(x)$ two quantities which include between them an odd number of roots of the equation $f(x) = 0$, we shall obtain results with contrary signs.

2. In an equation of the nth degree in its simplest form if p be the numerical value of the greatest negative coefficient, and x^{n-r} the highest power of x which has a negative coefficient, $1 + \sqrt[r]{p}$ is a superior limit of the positive roots.

3. State and prove Descartes' rule of signs.

4. Prove that

$$f'(x) = \frac{f(x)}{x-a} + \frac{f(x)}{x-b} + \frac{f(x)}{x-c} + \&c.$$

where a, b, c, &c. are the roots of the equation $f(x) = 0$

5. Transform the equation

$$x^3 + p x^2 + q x + r = 0$$

into another the roots of which are the squares of the differences of the roots of the proposed equation.

6. In an equation with real co-efficients imaginary roots enter in pairs.

7. Solve the equation

$$2 x^6 + x^5 - 13 x^4 + 13 x^2 - x - 2 = 0$$

8. If n be a prime number and a any root of the equation $x^n - 1 = 0$ except unity, prove that all the roots of the equation will be furnished by the series a, a^2, a^3, a^n.

9. Transform into an equation wanting the second term the following equation :—

$$x^4 - 8 x^3 + 18 x^2 - 15 x + 14 = 0$$

10. Solve the following equation which has equal roots :—

$$x^4 - \tfrac{1}{2} x + \frac{x}{16} = 0$$

11. By the method of indeterminate coefficients show that

$$\sqrt{1 + x + x^2 + \&c.} = 1 + \tfrac{1}{2} x + \tfrac{3}{8} x^2 + \&c.$$

12. Investigate a formula for finding the *permutations* of n things, and apply it when $n = 16$.

13. Insert two harmonic means betwen 6 and 24.

14. Sum the series.

$$\tfrac{2}{3} - \tfrac{1}{2} + \tfrac{3}{8} + \&c., \textit{ ad inf.}$$

15. Find the middle term of the expansion of

$$\left(a^{\frac{1}{3}} + b^3 \right)^8$$

SECOND YEAR.

ANALYTIC GEOMETRY.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 1.

Examiner,.....ALEXANDER JOHNSON, LL.D.

1. Show that

$$ax^2 + 2hxy + by^2 + 2gx = 0,\ a'x^2 + 2hxy + by^2 + 2gx = 0$$

represent two conics having a contact of the third order.

2. Prove that the co-ordinates of the centre of curvature for any point $x'\ y'$ on a central conic are

$$\frac{a^2 - b^2}{a^4}\ x'^3 \text{ and } \frac{b^2 - a^2}{b^4}\ y'^3$$

3. Find the locus of the centre of a circle which touches two given circles.

4. The locus of the extremity of the perpendicular from the focus of a parabola on the tangent is a right line.

5. If two fixed points on an hyperbola be joined to any variable point on the curve, the portion which the joining lines intercept on either asymptote is constant.

6. The focal radii to any point on an ellipse make equal angles with the tangent.

7. Investigate the relation between the eccentricity of an hyperbola and the angle between the asymptotes.

8. Prove that if through any point two real lines can be drawn to meet the curve at infinity, parallel lines through any other point will meet the curve at infinity.

9. Given the base and vertical angle find the locus of the intersection of the perpendiculars of the triangle.

10. Find the condition that a circle should touch the axis of x, the equation being in its most general form.

11. Find the condition that the equation of the second degree in its most general form should represent two right lines.

12. Find the expression for the area of any triangle in of terms the co-ordinates of its vertices.

SECOND YEAR.

CALCULUS—TRIGONOMETRY.

MONDAY, APRIL 26TH:—MORNING, 9 TO 1.

Examiner,..... ....ALEXANDER JOHNSON, LL.D.

1. Find

$$\int \frac{(A + B \tan x)\, dx}{a + b \tan x}.$$

2. Find by integration the expression for the areas of a circle and an ellipse.

3. Investigate any one way of rationalizing the expression

$$\frac{f(x)}{F(x)} \quad \frac{dx}{\sqrt{a + 2bx + cx^2}}$$

4. Find the formula of reduction for

$$\int \frac{x^m\, dx}{(a + cx^2)^n}$$

5. Find

$$\int \frac{x^4\, dx}{(1 - x^2)^{\frac{1}{2}}}; \quad \int x^3\, e^{ax}\, dx; \quad \int x^4 \sin x\, dx.$$

6. Find the values of

$$\int_0^{\frac{\pi}{4}} \sin^2 x\, dx; \quad \int_0^{\pi} \sin m x \sin n x\, dx.$$

7. Investigate the conditions for a maximum or minimum value of a function of a single variable.

8. Find the value of $u = \frac{e^{mx} - e^{ma}}{(x - a)^r}$ when $x = a$.

9. Find by Maclaurin's theorem, as far as x^4, the expansion of $\log(1 + \sin x)$ in ascending powers of x.

10. If $y = x^{n-1} \log x$, find $\frac{d^n y}{d x^n}$.

11. Find $\frac{dy}{dx}$ in the following examp'es :—

$$y = \sin(\log x)\ ;\ y = \log(\log x);\ y = e^{ax} \sin r x.$$

12. In a spherical triangle prove

$$\sin \tfrac{1}{2}(A - B) \sin \tfrac{1}{2} c = \sin \tfrac{1}{2}(a - b) \cos \tfrac{1}{2} C.$$

13. Prove the rule for finding the approximate logarithms of numbers consisting of more places of figures than those in the tables.

14. Prove

$$\cos a = \tfrac{1}{2} \left\{ e^{a\sqrt{-1}} + e^{-a\sqrt{-1}} \right\}$$

15. The two angles of a right-angled spherical triangle are 39° 42 and 74° 26′; find the hypotenuse.

THIRD YEAR.

ASTRONOMY—HYDROSTATICS.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 1.

Examiner,..... ALEXANDER JOHNSON, LL.D.

1. Explain clearly the *diurnal aberration* of a star, and show that in consequence of it the time of transit of a star whose declination is δ is retarded at upper culmination and accelerated at its lower culmination by

$$0^s{\cdot}0213 \cos \lambda \sec \delta$$

where λ = latitude of place; assuming the velocity of light to be 186,000 miles per sidereal second.

2. Investigate the general differential equation for refraction.

3. State Simpson's assumption, and deduce his formula for refraction.

3. Show that the effect of Parallax on the Right ascension of a star observed at a distance from the meridian is

$$\frac{P' \sin \gamma' \sin h}{\sin D}$$

Where $P' = \frac{r}{a} \times$ Horizontal Equatorial Parallax.

γ' = co-latitude + angle of the vertical.

h = lower-angle.

D = North Polar Distance.

4. Investigate a method for finding the times of first and last contact with the penumbra in a lunar eclipse.

5. Find the altitude and hour angle of a star whose declination is 38 38′ N. when it is exactly West of an observer in Lat. 42° 22′ N.

6. Explain Talcott's method of finding the latitude of a place by observing the difference of the meridian zenith distances of two stars on opposite sides of the zenith.

7. At a place in Lat. 25° 40′ N. the sun's correct central altitude was found to be 10° 6′ 27″, when his declination was 8° 5′ 56″ S. What was his distance from the meridian?

8. A hemisphere is filled with homogeneous fluid; find the resultant action on one of the four portions into which it is divided by two vertical planes through its centre at right angles to each other.

9. A solid cone is immersed in a fluid with its axis vertical and its vertex just at the surface, if r be the radius of the base, h the length of the axis, and l the distance of each point in the periphery of the base from the vertex, prove that the whole pressure on the surface of the cone is

$$\tfrac{1}{3}\pi g \rho h r (2l + 3r)$$

10. A rectangular plank is immersed vertically to any depth within a fluid, the two ends of the plank being horizontal. If a and b be the depths of the upper and lower ends of the plank, prove that the depth of the centre of pressure is

$$\frac{2}{3}\frac{b^3 - a^3}{b^2 - a^2}$$

11. If h h,′ be the altitudes of the mercury in a barometer placed in a cylindrical diving-bell, of length a, at the beginning and end of a descent, show that the depth of the top of the bell is

$$(h' - h)\, m - \frac{ha}{h'}$$

m being the density of mercury.

12. Two fluids whose volumes are V, V' and sp. gr. S, S' on being mixed are found to have lost $\frac{1}{n}$ th part of the sum of their original volumes, show that the specific gravity of the mixture is

$$\frac{n}{n-1} \cdot \frac{VS + V'S'}{V + V'}.$$

THIRD YEAR.

MECHANICS.

MONDAY, APRIL 26TH:—MORNING, 9 TO 1.

Examiner, ... ALEXANDER JOHNSON, LL.D.

1. A flexible inextensible string hangs from two fixed points which are in a horizontal line, and whose distance apart is $2b$; being given the whole weight (W) of the chain, find the section at any point so that there shall be a constant tension (p) per unit of section at all points.

2. A heavy uniform elastic ring is placed round a smooth vertical cone; find how far it will descend.

3. Find the centre of gravity of a spherical triangle.

4. A cylinder is supported on a rough inclined plane by a string coiled round it in a direction perpendicular to its axis, the string passing over a smooth pulley and sustaining a weight; find the limits to the direction of the string.

5. A triangular board of uniform thickness rests on two smooth pegs P and Q, at a given distance from each other, in the same horizontal line; find its position of equilibrium.

6. Find the position of equilibrium of a heavy particle placed on the smooth conic whose equation is

$$\frac{x^2}{a^2} - \frac{2xy}{h^2} + \frac{y^2}{b^2} = 1$$

the axis of y being vertical, and the conic lying in a vertical plane.

7. The diameter of a screw-press is 10 feet, the interval of the threads is 1 inch, the diameter of the screw 9 inches, and the co-efficient of friction is $\frac{1}{3}$; what effort can a press of this kind produce by the application of a force of 10 lbs.

8. Four balls A, B, C, D, of perfect elasticity, are placed in a straight line. Find the ratio of their masses, so that the quantity of motion in A may be equally divided among the four balls after the shock.

9. If two weights P, P', resting upon inclined planes whose angles of inclination are i and i', and which have a common vertex, be joined by a string, show that the tension of the string is

$$\frac{P\,P'}{P+P'}\,(\mathrm{Sin}\,i + \mathrm{Sin}\,i')$$

10. A particle acted on by a constant force in its line of motion, moves

in a resisting medium of uniform density, of which the resistance varies as the square of the velocity; determine the motion when the force acts so as to diminish the distance from the point chosen as origin.

11. A particle constrained to move in a straight line is acted on by a force always directed to a point outside the line, and varying directly as the distance of the particle from that point; determine the motion.

12. When a point is in motion in any curve, find its accelerations along, and perpendicular to, the tangent, at any instant.

13. A particle moves in a straight line under the action of a force varying nversely as the nth power of the distance of the particle from a fixed point in that line; determine the motion.

ENGLISH LANGUAGE AND LITERATURE.

FIRST YEAR.

ENGLISH LANGUAGE.

FRIDAY, APRIL 9TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What is noteworthy concerning the following:—*kind, ancient, puny, master, as, orchard, ye. number, church, day.*

2. Explain the terms *presentive* and *symbolic*. Apply them (*a*) to the words of the first sentence of question, (*b*) to the words *thing* and *bow-wow*.

3. Illustrate the terms *flat*, *flexional*, and *phrasal* as applied to Adverbs, to Adjectives, and to Syntax.

4. Take any ten word-inflections and discuss them as fully as you can.

5. Give the past tense and the past participle of each of the following verbs:—row, betide, spit, slide, flee, read, abide, bid.

6. Classify compound words and give examples of each class. Cite a few compound words which present features worthy of note.

7. Give instances in which the *same* word may be (*a*) an adjective, an adverb, a preposition; (*b*) an adverb, a preposition, a conjunction; (*c*) a pronoun, an adverb, a conjunction; (*d*), a noun, an adjective, a verb; (*e*) a verb, an adjective, an adverb; (*f*) a noun, an adjective, an adverb.

8. Define a preposition; classify prepositions; enumerate the various meanings of *of* and *by*.

9. Is the Interjection a part of speech? Into what two classes may interjections be divided? Explain the division. Comment on *lo! fudge! by'r leave*, if you please!

10. Correct the following sentences, giving your reasons whenever you make an alteration:

(*a*) The next New Year's day I shall be at school three years.

(*b*) The style of a speaker and writer are vastly different.

(*c*) Coming along the road, the fine old bridge made its appearance, which one always likes to stand upon going over.

(*d*) It is more good to fall among crows than flatterers, for these only devour the dead, those the living.

11. Analyse grammatically:—

(*a*) This truth came borne with bier and pall,
I felt it, when I sorrowed most,
'Tis better to have loved and lost
Than never to have loved at all.

(*b*) Ask the connoisseur, who has scampered over all Europe, the shape of the leaf of an elm, and the chances are ninety to one that he can not tell you; and yet he will be voluble of criticism on every painted landscape from Dresden to Madrid, and pretend to tell you whether they are like nature or not.—*Ruskin.* Is sentence (*b*) correct?

FIRST YEAR.

ENGLISH LITERATURE.

FRIDAY, APRIL 9TH:—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. When and where did (*a*) Allegory, (*b*) Neo-platonism arise? Trace the influence of each on Elizabethan literature.

2. In what English contemporary writings is Euphuism satirized, and on what grounds? What is Euphemism?

3. What do you know concerning the Hotel Rambonillet and the French Academy.

4. Discuss in detail the influence of France on English literature as regards (*a*) the Drama, (*b*) works on Criticism.

5. Sketch the life of Joseph Addison, and show to what literary influences he was subject.

6. What facts concerning the causes and the course of the French Revolution should be known by the student of English Literature?

7. Reproduce what was said in the lectures regarding;—*The Anti-Jacobin; Wat Tyler; Vindiciæ Gallicæ; An Address to the Irish People; The Pleasures of Hope.*

8. How was Wordsworth affected by the advanced thought of his time if we take *The Prelude* and *The Excursion* as evidence?

9. Show that the general estimate of Byron's place in our literature is incorrect, and unfold carefully the mutual relations between that poet and the various countries of Europe.

INTERMEDIATE EXAMINATION.

HISTORY OF ENGLAND.

TUESDAY, APRIL 6TH:—AFTERNOON, 2 TO 5.

Examiners,..... { CHAS. E. MOYSE, B.A. / REV. PRINCIPAL TANNER. / REV. PROF. MCQUARRIE, B.A.

1. In what parts of England did Angles, Jutes, and Saxons settle? Which of these tribes eventually became predominant, and when?

2. Mention the more important events of Alfred's reign. What do you know concerning the Danelagh?

3. Who was Harold, the foe of William the Conqueror? On what grounds did he claim the throne?

4. Trace the descent of King Stephen and his rival Maud from William the Conqueror. Describe the course of the civil war between them.

5. What famous measures were passed during Plantagenet rule to check the power of the Church? Can you give the tenor of those most worthy of note?

6. For God's sake, let us sit upon the ground,
And tell sad stories of the death of kings:
How some have been deposed; some slain in war;
Some haunted by the ghosts they have deposed;
Some poisoned by their wives; some sleeping killed;
All murdered.

Apply your knowledge of English History to these remarks of Richard II.

7. Mention trials of grave constitutional importance which happened under the Stuarts, and examine the issues at stake.

8. Name as many insurrections and rebellions in England as you can remember; briefly state the causes of each, and describe any one rising in detail.

9. Notice the salient points of the history of Ireland since its conquest by England.

10. Summarize the events which occurred during the reign of Charles II. *or* of George III.

B.

1. Tell what is known of John Lyly's life. Unfold the plot of his *Endimion*, and make a note or two concerning the style of the play.

2. Mention the kind of evidence, (*a*) external, (*b*) internal, (*c*) partly external, partly internal, which serves to determine, approximately, the dates of Shakespeare's plays.

3. Disclose the essentials of the inner thought of *A Midsummer Night's Dream* or of *The Merchant of Venice*.

4. In what dramas are the following characters found?—*Matthew Merrygreek; Valdes; Andrugio, Duke of Genoa; Friar Bungay.* Choose any one of those dramas, give its date, sketch its outline, and mention noteworthy facts in the life of its writer.

5. Display, at length, your knowledge of the literature of the Jonson Dekker, and Marston quarrel.

6. *Captain Bobadil, a Paul's Man.* (*a*) Explain clearly the title of the play in which we meet with Bobadil. (*b*) Notice the prominent features of Bobadil's character, by referring to the incidents in which he takes part. (*c*) Show, by appeal, to the Elizabethan drama, that he is a type. (*d*) State the meaning of "a Paul's man."

7. "My Lord, my particular contests with Mr. Travers here have proved the more unpleasant to me." (*a*) Who writes this? (*b*) sketch his life,

(*c*) explain the "particular contests," (*d*) point out the aims of his greatest work.

8. "Stukely, that renowned Englishman,
That had a spirit equal to a king."

Who was Stukely? Where, in Elizabethan literature, is he glorified?

9. Name controversial writings of the Elizabethan era, neither secretly printed nor dramatic, which were written to promote the Protestant or the Catholic cause, and state what you know concerning any one of them.

INTERMEDIATE EXAMINATION.

ENGLISH LITERATURE.

TUESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A.
REV. PROF. McQUARRIE, B.A.
REV. PRINCIPAL TANNER.

1. Spalding says, "The mass of our old literary relics may be described loosely as having constituted two distinct libraries." Comment on this assertion.

2. What languages were used for literary communication in the British Isles during the Anglo-Saxon period?

3. Give an account of the principal persons who cultivated Latin learning during this period.

4. Spalding writes of Anglo-Saxon poetry;—"We possess three Historical poems, all of which record Teutonic recollections of the continent." Name the poems, and reproduce the substance of the remarks made concerning them.

5. Notice the system of Anglo-Saxon versification and the style of Anglo-Saxon poetry.

6. Distinguish between the Latin Tales, Fabliaux, GestaRomanorum, and the Romances of Chivalry.

7. Sketch the outline of the Romances of the Round Table.

8. What great work did Layamon write and what are Spalding's statements concerning it?

9. Relate the leading incidents in *The Vision of Piers the Plowman*.

10. Describe "some features in the Storie of Thebes," and mention the author's name and his date.

11. "The Gothic languages may be said to fall into three great families." Name these families, and the languages which each comprehends.

12. What do you know concenring *The Pastime of Pleasure* ?

INTERMEDIATE EXAMINATION.

ENGLISH ESSAY.

WEDNESDAY, APRIL 14TH:—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A. / REV. PROF. MCQUARRIE, B.A. / REV. PRINCIPAL TANNER.

Write an Essay, not less than two pages in length, on *one* of the following subjects, attending carefully to sequence of thought, clearness of expression, and punctuation :—

(*a*) A Library.

(*b*) The value of a Classical Education.

(*c*) War.

B.A. ORDINARY EXAMINATION.

ENGLISH LITERATUBE.

Shakespeare, *Hamlet ;* Hallam, *Introduction to The Literature of Europe.*

TUESDAY, APRIL 6TH:—AFTERNOON, 2 TO 5.30.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Whence did Shakespeare derive the story of Hamlet, and in what respects has he altered the old tale ?

2. Mention the kind of evidence (*a*) external, (*b*) internal, (*c*) partly external, partly internal, which serves to determine, approximately, the dates of Shakespeare's plays.

3. Show that *a theory* or *an idea* cannot solve the mystery of *Hamlet.*

4. Point out noteworthy differences between Shakespearian and Modern English, with illustrations from the drama prescribed.

5. Mention prominent traits of character which you have discerned in, (*a*) Hamlet, (*b*) Laertes, (*c*) Ophelia. Substantiate your statements by quotations.

6. Reproduce, as faithfully as you can, (*a*) the revelations of the Ghost to Hamlet, (*b*) the murder of Polonius and the subsequent dialogue between Hamlet and the Queen, (*c*) the duel between Hamlet and Laertes, and its consequences.

7. Say in what connection each of these extracts occurs, and give its context:

(*a*) Frailty, thy name is woman!
(*b*) Give every man thy ear, but few thy voice.
(*c*) Nature is fine in love, and where 'tis fine,
It sends some precious instance of itself
After the thing it loves.
(*d*) The hand of little employment hath the daintier sense.

8. Comment on the words in italics: The *rivals* of my watch; the altitude of a *chopine;* to split the ears of the *groundlings; Termagant*; this folly *douts* it; their *even* Christian; we must speak by the *card;* in the *bilboes; thinks't* thee.

9. Make a few remarks concerning the dawn of Greek literature in England, and the first Englishmen who became Greek scholars.

10. Give the substance of Hallam's criticism of *The Faerie Queene.*

11. Who wrote the *Novum Organum?* With what subjects does it deal?

12. Express Hallam's opinions in regard to Milton's early poems.

B. A. ORDINARY EXAMINATION.

ENGLISH LITERATURE.

Chaucer:—*The Prologue to the Canterbury Tales.*

TUESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiners, ... { CHAS. E. MOYSE, B.A.
REV. PROF. MCQUARRIE, B.A.

1. Name events in Chaucer's life that would tend to Gallicise his speech, and cite examples of such speech from the Prologue. What great poem of Chaucer's day contrasts with the Canterbury Tales in word-source?

2. Render the following into Chaucer's English:—April with its showers sweet; The young sun; A lover and a lusty bachelor; Why ought he to study and make himself mad? In all the orders four is none that knows; It seemed to him he rode quite in the new fashion; In his bag he had a pillow-case, which, he said, was our lady's veil; But, best of all, he

sang an offertory; If ye are not merry, smite off my head. Comment fully on the alterations you have made.

3. From your acquaintance with the Prologue cite customs and modes of dress which distinguish, (*a*) the "gentle" from the "simple" folk, (*b*) any three pilgrims from the rest of their fellow-travellers.

4. Make a note or two on *hem* and *them*; *here* and *their*; *baker* and *baxter*; *foster* and *forster*; *me* (personal) and *me* (indefinite); *stately* and *estatlich*; *thing* (presentive) and *thing* (symbolic); *mo* and *more*; *ax* and *ask*; *eyghen* and *eyes*.

5. (*a*) Explain allusions, (*b*) comment on the words in italics, (*c*) scan each line and say in what connexion it occurs.

(1) The holy blisful martir *for to seeke*.
(2) The reule of seynt Maure or of seint Beneyt.
(3) And *poudre-marchant tart* and *galyngale*.
(4) *Gattothed* was sche sothly for to seye.
(5) That *highte* the Tabard *faste* by the Belle.
(6) Unto the watering of Saint Thomas.

6. Mention peculiarities of the early English inflections of, (*a*) verbs, (*b*) nouns, (*c*) adjectives, that you have not met with in questions 1-5.

7. Express in Chaucer's language, when you can, the speech of the Landlord after the supper at the inn. (*b*) Describe, accurately, the Prioresse and the Sompnour.

8. Write concerning ten Chaucerian words of your own choice, which you think in some way interesting.

9. Tell in what respects the study of Chaucer is of benefit to the student of English.

B. A. ORDINARY EXAMINATION.

HISTORY OF ENGLAND.

MONDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiners,..... { CHAS. E. MOYSE, B.A.
REV. R. MCQUARRIE, B.A.

1. State briefly the chief events of the history of English Saxondom before Wessex became supreme.

2. Explain the following:—*Scutage, aid, compurgation, ordeal, witenagemot, wergild, fief*.

3. Trace the descent of each Sovereign of the Plantagenet dynasty.

4. Tell the story of the conquest of Ireland in the reign of Henry II.

5. How, and when, did England acquire possessions in France? How and when, did she lose them?

6. What were the leading parliamentary measures, anterior to the accession of Henry VIII., by which the power of the Church was checked? (*b*) Mention the successive steps which Henry VIII. took to free the nation from Papal overlordship.

7. Mention, in detail, the causes which led to the accession, (*a*) of Henry VII., (*b*) of William III.

8. Tell what you know concerning the history of, (*a*) the Mad Parliament (*b*) the Long Parliament.

9. Summarize the remarkable events of the reign of George I., and describe, at length, any one of them.

10. What is noteworthy regarding (*a*) the treaty of Aix-la-Chapelle, (1748) (*b*) John Wilkes, (*c*) the Repeal of the Corn Laws.

EXAMINATION FOR THE EARLY ENGLISH TEXT SOCIETY'S PRIZE.

TUESDAY, APRIL 27TH:—AFTERNOON, 2 TO 6.

Examiner,.....CHAS. E. MOYSE, B.A.

I. *Anglo-Saxon.*

(*a*) Translate:—A. *Anglo-Saxon Chronicle*, 755. The story of Cynewulf and Cyneheard. B. Beowulf. Hé him thæs lean forgeald. . . Thæt is soth Metod. C. [Extract not previously read]. Ælfrie. *The Nativity of the Innocents.* On tham twelftan dæge cristes acennednysse. . . . . hamcyme. D. [Extract not previously read]. Cædmon. *The Fall of the Angels.* Tha spræc se ofermoda cyning. . . . word wurthian.

(*b*) Tell what you know concerning *Wilfrid* and *Aldhelm.*

II. *Early English. Morris and Skeat's "Specimens,"* 1298-1393.
Translate the following extracts; p. 25, vv. 11-14; p. 29, vv. 7-14; p. 39, vv. 146-161; p. 161, vv. 947-972.

Havelok the Dane.

1. Recount the notices of the story of Havelok by early writers.

2. Give a sketch of (*a*) Le Lai d'Aveloc; (*b*) The Lay of Havelok.

3. What is the possible date of Havelok's reign?

4. Translate the following extracts, vv. 1764-1831; vv. 2563-2619. Comment (*a*) on their metre, (*b*) on their grammar.

5. Give the meanings of the following words, adding a note when you can:—anilepi, drit, file, arwe, em, kippe, ward lewe, berwen, bote, chinche, hete-like, gisarm, citte, rippe.

THIRD YEAR HONOUR EXAMINATIONS IN ENGLISH.

Spenser, *The Faerie Queene, bk. I.*; Wordsworth, *The Prelude.*

SATURDAY, APRIL 17TH:—MORNING 9 TO 12.

Examiner, ...CHAS. E. MOYSE, B.A.

1. From what you know of Spenser's early training, and of the moral precepts set forth in the first book of his great poem, unfold the chief traits of his character.

2. Show by quoting from *The Faerie Queene* to what famous writers Spenser was indebted both for idea and for phrase.

3. (*a*) "I chose the historie of King Arthure." (*b*) "For the Methode of a Poet historicall is not such as of an Historiographer." Reproduce Spenser's remarks regarding these statements.

4. What do the chief actors in book I. mean in the Allegory?

5. Describe (*a*) the struggle between the Red Cross Knight and Error, (*b*) the adventures of Kirkrapine, (*c*) Arthur, (*d*) Arthur's combat with Orgoglio.

6. Write a short essay on Spenser's language, stanza, and style.

7. What causes produced the French Revolution?

8. How did that Revolution affect Coleridge, Southey, Wordsworth?

9. What was Wordsworth's aim in writing *The Prelude?* Show that he kept that aim steadily in view.

10. From your knowledge of *The Prelude*, answer this question: "Is Wordsworth a philosopher?"

11. Describe Wordsworth's University life, and state his opinions concerning Knowledge.

Milton —*L'Allegro; Il Penseroso; Arcades; Comus; Lycidas.*
Dryden:—*Annus Mirabilis; The Hind and the Panther; Absalom and Achitophel.*

THURSDAY, APRIL 22ND:—MORNING, 9 TO 12.30.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Mention, in due order, noteworthy events in Milton's life, prior to the publication of *L'Allegro* and *Il Penseroso*.

2. On what principle may many difficult passages in Mi ton be clearly explained? Justify your statements.

3. Show that several prevalent opinions regarding the titles *L'Allegro* and *Il Penseroso* are erroneous. Examine the construction of the two poems.

4. *Arcades.* Why this title? Quote from *Arcades* as many classical allusions as you can, and explain them.

5. What were Milton's designs in writing *Comus?*

(*a*) Reproduce the substance of the speech of Comus on his first entry with his "rout of monsters."

(*b*) State carefully the leading points of the argument between Comus and the Lady and make any comments thereon that you deem noteworthy.

6. Write a brief essay on the merits of *Lycidas*, and substantiate your assertions by referring to the poem. Quote any passage you think especially good, and point out its excellence.

7. What matters does Dryden discuss in his "prefatory" account of *Annus Mirabilis?* Show that they are of importance to the student of English Literature.

(*b*) Criticise the style of *Annus Mirabilis*, and notice Euphuistic expressions.

(*c*) What does Dryden say concerning "shipping" and "navigation?" Give the essentials of the King's prayer.

8. Why was *Absalom and Achitophel* written? Give Dryden's description of the character of (*a*) Absalom, (*b*) Achitophel, (*c*) Barzillai.

9. Sketch the outline of *The Hind and Panther.* Explain the following allusions:

(*a*) From Celtic woods is chased the wolfish crew.

(*b*) And Luther more mistaking what he read,
Misjoins the sacred body with the bread.

(*c*) Curtana will not do the deed.
(*d*) Your sons of latitude that court your grace.
(*e*) God save King Buzzard! was the general cry.
Can you tell in what connection each occurs?

ANGLO-SAXON.

SATURDAY, APRIL 24TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

I. Translate:—

A. [Ælfric's Homilies].

(1) Rénscuras and cyrcan duru.....hé hit gegaderath.

(2) Tha cwæth se hæthengylda .....hine ealne gedranc.

B. [Extract not previously read—Alfred's Orosius, bk. ii., cap. iv.]

Nu seo burg swelc is.....thurhwunigean mæge.

II. Questions on the extracts:—

A. *duru*, *hit*, *twegen*, decline; *bryeth*, *syllan*, *cwæth*, *onfo*, principal parts; *lichaman*, *attorbæran*, resolve; *nat*, explain this form and conjugate the verb in full; *witega*, root and other derivatives; *scealt*, exac- meaning; *gif*, *heahgerefan*, etymology; *mid*, make a brief note; *gebyldum*, parse.

B. *swelc*, what changes has this word undergone? Cite kindred examples; *the*, *hwæt*, parse; *middangeardc*, explain; *self*, comment; *ongietan*, principal parts; *nanuht*, resolve; *fæstes*, what case and why?

III. Grammar.

1. What Runic letters appear in the Anglo-Saxon alphabet? Comment on Runes.

2. Classify the Anglo-Saxon noun-declensions, and name a word of each declension.

3. Decline, god, se goda, thes (all genders), threo, thu.

4. Write the Cardinal numerals from *four* to *ten*.

5. Give the comparative and superlative of, in, north, ut beah, geong.

6. Mention the principal parts of wépan, bindan, helan, sprecan, ceosan. faran.

7. Comment on six Anglo-Saxon prefixes.

IV. Literature.

1. State the chief topics with which Anglo-Saxon Literature deals, and the leading works relating to each.

2. What do you know concerning the Culdees?

3. Sketch the literary career of, (*a*) Bede, (*b*) John Scotus Erigena, and unfold, in detail, the nature of their writings.

4. "Milton borrowed from Cædmon." Does this statement admit of substantiation?

EARLY ENGLISH.

MONDAY, APRIL 26TH:—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

I. Translate:—

A. Robert of Gloucester.—*Description of the battle of Senlac.*
A suein that het Taylefer.....keveringe ther-of is.

B. Robert Mannyng of Brunne.—*Handlyng Synne.*
Zole ful feyre gan hem calle.....spak hym to.

C. Dan Michel of Northgate.—*Sermon on Matthew* xxiv. 43.
Ich yzez the ilke..... .....ende chongedon.

D. Chaucer.—*Honne Prestes Tale.*
Lo, Catoun, which that was so wis a man
....
Dredeth non dreem; I can say yow no more.

II. Comment on the words and parts of words in italics:—*Uor-arnd; anaunter; half; ssepthes*, swoote; *esed* atte beste; made *forward*; me *thinketh*; *gepoun*; *chivachie*; to stonden; night*er*tale; *not-heed*; *wastel* breed; smot smerte; That *stemede* as a *forneys* of a *leede*; pleyen on a *rote*; tappe*stere*; eyghen; in *mewe*; *dragges*; *daungerous*; dred*eth* non dreem.

III. Give Chaucer's description of the clerk of Oxford, also of "the portraiture that was upon the walls" of the Temple of Mars.

2. Writea short essay on *Chaucer as Poet.*

3. Notice clearly and carefully the salient points of the history of English inflection-decay.

Hallam :—*Europe during the Middle Ages*, Caps I, III, V, IX. Milton — *Areopagitica*. Macaulay :—*History of England*, Vol. I., Cap. I.

TUESDAY, APRIL 27TH :—MORNING, 9 TO 1.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What remarks does Hallam make concerning the aggrandizement of the French monarchy under Philip the Fair?

2. Notice the intrigues of the Dukes of Burgundy with England during the reigns of Henry IV. and Henry V.

3. Describe the rise of the Lombard cities and their conflict against Frederic Barbarossa.

4. Make a note or two concerning Sir John Hawkwood.

5. Mention the leading events of the history of Switzerland previous to the sixteenth century.

6. Comment on the decline of Literature in the latter period of the Roman Empire. To what causes was the decay due?

7. What do you know concerning the early woollen manufacture of Flanders and its effects on England?

8. Discuss (*a*) the origin of chivalry, (*b*) the connection of chivalry with feudal service, (*c*) the effect of the crusades on chivalry, (*d*) the virtues of chivalry.

9. What produced Milton's *Areopagitica*?

10. Reproduce Milton's statements in regard to each of the following heads :—

(*a*) "In Athens I find but only two sorts of writings which the magistrate cared to take notice of." (*b*) What is said concerning Lacedæmon and the Romans?

"I could recount what I have seen and heard in other countries where this kind of inquisition tyrannizes."

"And that we are to hope better of all these supposed sects and schisms I have these reasons to persuade me."

11. How does Macaulay view the English Church?

12. Why were the vices and follies of John of benefit to England? To what does Macauley attribute the arbitrary sway of the Tudors?

13. Give Macauley's estimate (*a*) of the characters of the parties engaged in the Civil War of 1642-6; (*b*) of the character of Charles I, and Oliver Cromwell.

THIRD YEAR AND B. A. HONOURS.

THE CONSTITUTIONAL HISTORY OF ENGLAND (1216-1483).

WEDNESDAY, MARCH 31ST :—MORNING 9 TO 12.30.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Trace the history of the constitution from the Mad Parliament (1258) to Earl Simon's Parliament 1265.

2. Justify in detail :—

(*a*) "Important as this assembly (*Earl Simon's Parliament*) is in the history of the constitution, it was not primarily and essentially a constitutional assembly."—*Stubbs*.

b "The design of a national parliament is perfected in 1295."—*Stubbs*.

3. Discuss (*a*) the growth of juries, and the light in which they were regarded by people and by parliament; (*b*) the origin and the growth of the King's council.

4. Delineate, with care, the character of Edward I as a legislator.

5. With what matter do the following measures deal?—Statute of Gloucester; Statute de Religiosis; Statute of Westminster II; Statute of Winchester; Statute *quia emptores;* Act *de tallagio non concedendo; Articuli super cartas*.

6. Notice the salient points of the constitutional history of Edward the Second's reign, and examine the grounds for that King's deposition.

7. Sketch the rise of towns, and estimate their importance constitutionally. (*b*) "The establishment of staples was an unwise interference with trade."—*Longman*. Explain "staples," and give the outlines of the legislation appertaining to them.

8. What was the attitude of the Church towards King, Parliament, and Nation during the reigns of Edward III and Richard II? Unfold the nature of the ecclesiastical measures sanctioned by those Sovereigns.

9. Substantiate fully, (*a*) "Our parliaments under the House of Lancaster, besides maintaining the rights which had been acquired by their predecessors, established others of great importance."—*Creasy*. (*b*) "The Lancastrian period of our parliamentary history is peculiarly remarkable for the statutes which were then passed respecting elections."—*Creasy*.

B.A. HONOUR EXAMINATIONS IN ENGLISH.

HISTORY OF ENGLAND.

Hallam, *Constitutional History, caps i, v to xiv.* Macaulay, *History of England, vol. i, caps ii and iii.*

WEDNESDAY, MARCH 31ST:—AFTERNOON, 2.30 to 5.30.

Examiner, ... CHAS. E. MOYSE, B.A.

1. Name distinguished persons executed for treason in the reign of Henry VIII., and mention some of the charges brought against them.

2. Give the substance of Hallam's remarks touching the origin and the jurisdiction of the Court of Star Chamber.

3. Sketch the rise of the force called *Militia*. "His (*Charles's*) refusal to pass which (*a bill regulating the militia*) led by rapid steps to the civil war." Explain.

4. Comment on the following:—Treaty of Uxbridge; Glamorgan's Treaty; The Instrument of Government; An Humble Petition and Advice.

5. Relate the career of Clarendon, and express the tenor of the parliamentary measures attributed to him.

6. What was (*a*) the Savoy Conference (*b*) The Act of Uniformity?

7. "The dismissal of Rochester was followed up by the famous declaration for liberty of conscience." Discuss this declaration and the manner in which it was received by the nation.

8. State Macaulay's opinions in reference to,

(*a*). The connection between Charles II. and France, (*b*) the views of the French king with respect to England.

(*a*). Sir William Temple's plan of Government, (*b*) the Exclusion Bill

(*a*). The population of England in 1685, (*b*) the revenue of England in 1685, (*c*) the chief provincial towns in 1685.

(*a*). The influence of French literature on English during the reign of Charles II, (*b*) the state of science in the reign of Charles II.

ENGLISH LITERATURE.

Pope, *An Essay on Criticism;* Cowper, *The Task*, Bk II.; Keats, *Endymion, Hyperion.*

THURSDAY, APRIL 8TH:—MORNING, 9 TO 12.

Examiner,..... .....CHAS. E. MOYSE, B.A.

1. Reproduce, as faithfully as you can, Pope's remarks on the following subjects:—(*a*) Nature is the best guide of judgment, (*b*) Homer, (*c*) Vergil, (*d*) Horace, (*e*) Erasmus.

2. Narrate an incident in Don Quixote, which Pope describes in the *Essay*. (*b*) How does Pope write concerning those who "for language all their care express."

3. "Such shameless Bards we have; and yet 'tis true,
There are as mad abandoned Critics too."
Give Pope's estimate of the character of such a critic.

4. (*a*) Who said, "Nature's chief master-piece is writing well?"
(*b*) Who was "not more learned than good?"
(*c*) Who was "the Muse's judge and friend?"
Mention the works of the authors to whom reference is made.

5. Describe, in Cowper's language when you can, (*a*) "a preacher, such as Paul," (*b*) the clerical cox omb, (*c*) the effect of popular applause.

6. Write the contexts of the lines:
(*a*) Oh for a lodge in some vast wilderness.
(*b*) England with all thy faults, I love thee still.
(*c*) 'Tis pitiful,
To court a grin, when you should woo a soul.

7. What allusions does Cowper make, (*a*) to recent events, (*b*) to persons in some respect noteworthy.

8. Sketch the outline of Endymion, and dwell upon any part that you deem especially beautiful.

9. Criticise the style of Endymion, and quote to substantiate your assertions.

10. Who was Hyperion? Describe (*a*) Hyperion's palace, his entrance into it, and his subsequent soliloquy, (*b*) the monsters of
"that sad place
Where Cybele and the bruised Titans mourned."

ENGLISH LITERATURE.

Spenser, *The Faerie Queene*, Bk. I; Wordsworth, *The Prelude*.

THURSDAY, APRIL 8TH:—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Whence did Spenser derive the materials which he elaborated into *The Faerie Queene?*

2. What matters, necessary to the clear understanding of *The Faerie Queene*, does Spenser set forth in his introductory letter to Sir Walter Raleigh?

3. When did the first book of *The Faerie Queene* appear? Where was it written?

4. Apply Spenser's two-fold allegory to the chief actors in Book I.

5. Give the substance of Spenser's description of, (*a*) Arthur, and his combat with Orgoglio, (*b*) the Cave of Despair, and the visit thereto of the Red Cross Knight.

6. Mention what you consider the noteworthy characteristics of Spenser's poetry. Explain the structure of the Spenserian Stanza, and say of what it is a modification.

7. Of what large work is *The Prelude* a part? Indicate its place in Wordsworth's design. When was it written?

8. Is Wordsworth's philosophy an "illusion"?

9. Carefully display the development of the inner thought of *The Prelude*, and show that it proceeds logically.

10. Relate the story of Wordsworth's University Life, as set forth in Books III. and VI.

11. Contrast the aim of *The Prelude* with that of *The Excursion*.

12. Mention (*a*) Satirists of Wordsworth, (*b*) their Satires, (*c*) the peculiarities they satirize.

ENGLISH LITERATURE.

Lectures on the Modern Poets.

MONDAY, APRIL 19TH:—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. How does the poetry of the nineteenth century differ in spirit and style from that of the eighteenth? Examine the causes which have produced such changes as you mention.

2. What did Wordsworth say concerning the language of poetry? When? Where? Who supported his views? Who opposed them, and by what arguments?

3. Give an account of the Pantisocracy.

4. Sketch Southey's career as a poet, and mention the leading incidents of one of his longer poems.

5. Tell the story of Campbell's University life, and mention features in it which are noteworthy. In what relation to the leading thought of the time does *The Pleasures of Hope* stand?

6. Quote the description of Edinburgh as given in *Marmion*, and point out its critical value.

7. Why was the *English Bards and Scotch Reviewers* written? Describe the character of the poem, and cite opinions of Byron concerning his work.

8. "I have always regarded him (*Pope*) as the greatest name in our poetry."—*Byron*.
Mention Byron's reasons for stating this, and supplement them by drawing parallels between the two poets. What did Byron think of contemporary writers?

9. Estimate, with care, Byron's true place in our Literature, and expose popular fallacies regarding it.

ENGLISH LITERATURE.

Shakespeare;—*Love's Labour's Lost*, *A Midsummer Night's Dream*, *The Tempest*.

Ben Jonson;—*Every Man out of his Humour*.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

1. What evidence does *Love's Labour's Lost* afford in regard to the literary influences felt by young Shakespeare? Justify your assertions by appealing to the comedy.

(*b*) With what matters are Biron, Don Adriano de Armado, and Costard concerned?
(*c*) Describe the scene in the play with which you are best acquainted.
(*d*) Explain:

Dictynna; the womb of pia mater; Sir, you shall present before her the Nine Worthies; while greasy Joan doth keel the pot.

2. Show at length, that *A Midsummer Night's Dream* is *not* a mass of incongruities.

(*b*) Unfold what you consider to be Shakespeare's idea of the characters and the influence of the fairies.

(*c*) Mention a few noteworthy points concerning the "mechanicals."

(*d*) Explain :—The nine men's morris is filled up with mud; in maiden meditation, fancy-free. Than all yon fiery oes and eyes of light; so flew'd, so sanded.

3. Whence did Shakespeare derive some leading ideas of *The Tempest?* What is worthy of note in the dramatist's treatment of them?

(*b*) In what actions do Antonio, Trinculo, and Miranda take part?

(*c*) What evidence does *The Tempest* afford that Shakespeare was of mature mind when he wrote it?

(*d*) Sketch the outline of Act V.

4. Explain the title *Every Man out of his Humour.* What vices does the play censure?

(*b*) Contrast Ben Jonson with Shakespeare, using the prescribed plays as material for argument.

(*c*) Sketch the character of (*a*) Fastidious Brisk, (*b*) Fungoso.

(*d*) Give the outlines of such plot as Every Man out of his Humor possesses.

(*e*) Explain,—cullisen; pomander chains; Sir Dagonet and his squire; a kind of stramazoun; one of Kemp's shoes; As 'tis in *Euphues.*

ENGLISH LITERATURE.

Shelley—*The Cenci*; Tennyson—*In Memoriam;* Matthew Arnold—*Essays in Criticism.*

FRIDAY, APRIL 23RD :—AFTERNOON, 2 TO 5.

Examiner,.....CHAS. E. MOYSE, B.A.

1. Of the characters in *The Cenci* Shelley says, "They are represented as Catholics, and as Catholics deeply tinged with religion." Can you justify this statement by referring to the drama?

2. Describe the events that happened at the Castle of Petrella.

3. Write a short essay on the dramatic merits of *The Cenci.*

4. Say in what connection each of the following extracts occurs :

(*a*) I see, as from a tower, the end of all.
(*b*) Repentance is an easy moment's work.
(*c*) What is done wisely, is done well.
(*d*) What 'twas weak to do,
'Tis weaker to lament, once being done.

5. Note similarities and differences between *Lycidas*, *Adonais*, and in *In Memoriam*.

6. Write, in full detail, on each of these heads :—

(*a*) The comprehensiveness and the tone of the Preface to *In Memoriam*.
(*b*) The reason for writing *In Memoriam* in short sections.
(*c*) *In Memoriam* possesses unity.
(*d*) *In Memoriam* moves steadily along the line of spiritual development.

7. Discuss what appear to you to be the three most important points in Matthew Arnold's first two essays.

ANGLO-SAXON.

MONDAY, APRIL 26TH :—MORNING, 9 TO 12.30.

Examiner,.....CHAS. E. MOYSE, B.A.

I. Translate :—

A. Alfred's *Translation of Orosius*, book ii. cap. iv.
After thæm Cirus.....nu thine fylle.

B. *Saxon Chronicle*, 894. On thys geare.....ne mehton ferien.

C. Alfred's *Beda*.—Account of Cædmon's death.
For thon tha.....nu secgan hirdon.

D. *Beowulf*.

(1). Com tha to Heorote.....deadne wisse.
(2). Ofereode tha æthelinga bearn.....fuslic f(yrd)leoth
(3). After thæm wordum .....grædig guth leoth.

E. (*Extract not previously read :*) Ælfric on The Old Testament.
Hé gesette on his ylde.....his gelathung.

II. 1. Give the principal parts of the *strong* verbs of D (1) and (3).

2. Make notes, grammatical or philological, on the following words :—A. ea, binnan, todælde. B. Féh, efese, oftor. C. untrumra, uhtsang, Scippendes. D. (1) swin, feore, had, beorn, hilderinc. (2) nicorhusa, holmclife, stundum. (3) missera, leothosircan, hofe, eorl, blacne, hring*mæl*.

EARLY ENGLISH.

MONDAY, APRIL 26TH:—AFTERNOON, 2 TO 4.30.

Examiner,..... .....CHAS. E. MOYSE, B.A.

I. Translate:—

A. *William of Palerne*:—
Werwolf was he non, wox of kinde
.....
and tale of the tidy child, that y of told ere.

B. "*Piers the Plowman*," *Passus VI.*
Now riden this folk, & walken on fote
.....
I wol wissen ow the wey hom to his place.

C. John Barbour.—*The Bruce*, book vii.
As he deuisit, thai haf done,
.....
And his way to the host tuk he.

D. John of Trevisa.—*Translation of Higden's* "*Polychronicon.*
Lib. I. cap. 59.
As hyt ys y- knowe..... .....for to be more y—told of.

II. A. Make notes on any words that illustrate *phonetic decay* or *dialectic peculiarity*.

B. Comment on *bordun*, *ampolles*.

C. Contrast the language of Barbour with that of his Southern contemporaries.

D. Apply as many word tests as you can to distinguish between the "thre maner speche."

LOGIC AND MENTAL AND MORAL PHILOSOPHY.

INTERMEDIATE EXAMINATION.

WHATELY'S LOGIC.

MONDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D

1. Distinguish the categorematic and syncategorematic words in the following sentence:—

"The old order changeth, yielding place to the new,
And God fulfils Himself in many ways."

2. Distinguish (*a*) singular and common, (*b*) concrete and abstract, (*c*) positive and negative, terms, illustrating the distinctions by an example of each.

3. (*a*) What is a predicable? (*b*) Define the different predicables.

4. Define the parts of which every proposition is composed.

5. Distinguish these parts in the following propositions: —

(*a*) None can acquire wealth who will not labour;
(*b*) Some of the most valuable books are seldom read;
(*c*) Many a man does not know himself;
(*d*) Two straight lines cannot enclose a space;
(*e*) Concrete common terms are all connotative.

6. Give the symbol for each of the propositions under the previous question.

7. Give the contradictory of each of the propositions under question 5.

8. (*a*) Name and describe the different kinds of conversion. (*b*) Convert each of the propositions under question 5.

9. Name and define the several terms and propositions of a syllogism.

10. Distinguish the terms and propositions of the following syllogism:— "The laws of justice are variable; and, therefore, they are not laws of nature, for these are not variable."

11. (*a*). What is meant by the mood; what, by the figure of a syllogism? (*b*) Distinguish the different figures.

12. Name the mood and the figure of the syllogism given under question 10, and reduce it to the first figure.

13. (*a*) Define a Sorites. (*b*) Explain how it is analyzed.

14. Distinguish (*a*) the two divisions of the fallacies, and (*b*) the two main sub-divisions of each.

15. Explain the nature of each of the following fallacies, and name the class to which it belongs.

(*a*) Vegetarians eschew animal food entirely, while the Esquimaux sometimes use no vegetable food, and it appears, therefore, that men may dispense both with animal and vegetable food.

(*b*) Mathematical studies improve the mind, but, as Logic is not a Mathematical study, it cannot improve the mind.

(*c*) The remission of the duty on quinine was followed by an increase of its price, and therefore the increase of the price was caused by the remission of the duty.

THIRD YEAR.

MORAL PHILOSOPHY.

TUESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Distinguish Ethics proper from the psychological basis of Ethics.

2. (*a*) Explain the fundamental difference between Epicureanism and Stoicism. (*b*) Distinguish the various forms of Epicureanism.

3. Give a brief outline of Utilitarianism as it is held at the present day.

4. State the main points in the criticism of Utilitarianism given in the lectures.

5. State the moral theories of Clarke, Wollaston, and Kant.

6. (*a*) What is a *right?* (*b*) What does every right imply? (*c*) Distinguish two classes of rights.

7. (*a*) What position may be assigned to truthfulness in a classification of duties? (*b*) Discuss the opposite extreme views which have been held as to the permissibility of departing from strict truth in statements.

8. (*a*) Explain how private property originates in society. (*b*) Describe the system opposed to private property. (*c*) Discuss the question whether the right of private property is absolute.

9. (*a*) What is forfeiture? (*b*) Show that it does not justify the excessive severities by which criminal jurisprudence has at times been characterized.

10. (*a*) Distinguish the *duty* from the *affection* of benevolence. (*b*) Show that affection, even if benevolent, is not a sufficient guide to a moral life.

11. Classify the personal duties.

12. (*a*) Distinguish the general and the special duties of self-control. (*b*) By what discipline is self-control to be acquired?

13. (*a*) What is the place of religious duties in a philosophical moral code? (*b*) Explain the nature and the moral significance of worship.

14. Explain the nature of virtue, as explained by Socrates on the one hand, by Aristotle on the other.

B. A. ORDINARY EXAMINATION.

MENTAL AND MORAL PHILOSOPHY.

(*Murray's Outline of Hamilton's Philosophy.*)

THURSDAY, APRIL 1ST:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. (*a*) Distinguish two kinds of knowledge. (*b*) To which of these is the term *Philosophy* applied? (*c*) What is the stricter meaning of the term?

2. Explain Hamilton's classification of the philosophical sciences.

3. (*a*) To what extent does the testimony of consciousness admit of doubt? (*b*) By what process of demonstration alone could its veracity be disproved?

4. (*a*) What is meant by a *mental power?* (*b*) Distinguish *faculty* and *capacity*.

5. (*a*) Explain the general classification of the qualities of body. (*b*) State in detail the classification of the primary qualities.

6. Explain the relation of the Conservative faculty to the Presentative on the one hand, and the Reproductive and Representative on the other.

7. (*a*) Distinguish the primary and the secondary laws of Reproduction. (*b*) State the primary laws, both general and special.

8. Explain the nature of productive imagination.

9. (*a*) What is meant by the question of the *primum cognitum?* (*b*) State the two extreme theories which have been held on the question, with the theory in which they are reconciled by Hamilton.

10. (*a*) State the conditions of positive thought. (*b*) Which of these is referred to in speaking of *the conditioned?* (*c*) Explain what is meant by the conditioned, distinguishing the contradictory extremes of the unconditioned.

11. Give a tabular view of the various theories of causality.

12. Sketch Hamilton's deduction of the law of causality from the law of the conditioned.

B. A. ORDINARY EXAMINATION.

MENTAL AND MORAL PHILOSOPHY.

(Stewart's Outlines of Moral Philosophy.)

FRIDAY, APRIL 2ND:—MORNING, 9 TO 12.

Examiner, ...J. CLARK MURRAY, LL.D.

1. (*a*) To what is the word *Action* properly applied? (*b*) To what is it applied in ordinary discourse?

2. Describe some of the forms in which the desire of power is manifested

3. Distinguish two kinds of resentment.

4. (*a*) Explain what is meant by self-love. (*b*) Distinguish it from implanted principles of actionon the one hand, and from selfishness on the other.

5. (*a*) Distinguish the different senses in which the word *Reason* is used. (*b*) In which sense is it understood when moral ideas are ascribed to it?

6. What is the source of the beauty of virtue?

7. State Clarke's argument for the existence of God.

8. (*a*) State the argument from final causes, and (*b*) give some illustrations of the wisdom and unity of God in confirmation of that argument.

9. (*a*) Explain the system of Optimism. (*b*) Distinguish its two forms, mentioning which is adopted by Stewart.

10. (*a*) Distinguish moral and physical evils. (*b*) How may the latter be reconciled with the benevolence of God?

11. What are the evidences for a future state derived from man's constitution and the circumstances in which he is placed?

12. Distinguish the *virtue* from the *affections* of benevolence.

13. Distinguish (*a*) candour and uprightness, (*b*) the different points of view in which the former may be considered.

14. (*a*) State the Stoical theory of the sovereign good. (*b*) Explain wherein it is true. (*c*) Point out its limitations, mentioning some mental qualities, of no moral desert in themselves, which are necessary to our happiness.

THIRD YEAR AND B.A. EXAMINATIONS.

FOR HONOURS IN MENTAL AND MORAL PHILOSOPHY.

Thomson's Outline of the Laws of Thought.

FRIDAY, 23RD APRIL :—MORNING, 9 TO 12.

Examiner,..... J. CLARK MURRAY, LL.D.

1. Distinguish (*a*) distinct and confused, *b* adequate and inadequate, cognitions.

2. Define (*a*) genus, (*b*) species, (*c*) individual, (*d*) proximate genus, (*e*) co-ordinate species.

3. (*a*) Distinguish positive and privative conceptions. (*b*) Explain the statement that a positive and the corresponding privative conceptions, taken absolutely, divide the universe. (*c*) To what extent does this statement practically hold good ?

4. (*a*) What is logical division ? (*b*) To what power of conceptions oes it correspond ? (*c*) Give its rules.

5. Distinguish (*a*) attributive and substitutive, (*b*) explicative, amplia-tive, and tautologous judgments, giving examples of each.

6. Explain the symbols A, E, I, O, U, Y, illustrating by examples.

7. Distinguish (*a*) mediate and immediate inferences, (*b*) the principal forms of the latter.

8. State (*a*) the general canon of mediate inference, (*b*) the special canons of the different figures.

9. Why is the fourth figure rejected by Thomson ?

10. Why does Thomson consider reduction unnecessary in application to the second and third figures ?

11. "Where the terms are equal, as in UUU of all figures, extension and intension are *in æquilibrio*." Explain this statement.

12. Distinguish the Goclenian and the Aristotelian Sorites.

THIRD YEAR AND B.A. EXAMINATIONS.

GREEK PHILOSOPHY.

MONDAY, 26TH APRIL :—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Give a general review of the Pre-Socratic philosophy.

2. (*a*) Describe the Pythagorean Society in its various aspects. (*b*) Explain the fundamental principle of their philosophy, and (*c*) illustrate some of its applications.

3. (*a*) Who were the early atomists? (*b*) Explain their conception of atoms, comparing it with other ancient conceptions of the elementary constituents of things.

4. Describe the Sophists, both on their favorable and on their unfavorable sides.

5. Describe the general character of the teaching of Socrates with the special features of his method.

6. Explain the general drift of each of the schools which arose from a one-sided view of the Socratic philosophy.

7. Explain the peculiarities in the teaching of Anniceris, Hegesias, and Theodorus respectively, in connection with the school to which they belonged.

8. Sketch Plato's theory of ideas.

9. Explain the origin of terms *Academic* and *Peripatetic*, as applied to ancient Greek schools.

10. Sketch the Metaphysic of Aristotle.

11. Compare the Epicurean conception of pleasure with that of the Cyrenaics.

12. Describe the character of the New Academy, and of the school with which it became identified.

B.A. EXAMINATION.

MILL'S LOGIC.

WEDNESDAY, 31ST MARCH :—MORNING, 9 TO 12.

Examiner, ... J. CLARK MURRAY, LL.D.

1. (*a*) What are terms called by Mill? (*b*) What is their import, accord-

ing to him? (*c*) Explain and illustrate the distinction between connotative and non-connotative terms.

2. (*a*) Give Mill's enumeration of nameable things, and (*b*) compare it it with the corresponding doctrines of Aristotle and Kant.

3. (*a*) Distinguish inferences proper from inferences improperly so called. (*b*) Explain Mill's theory on the nature of inference.

4. State the four methods of experimental inquiry.

5. Explain and illustrate the joint method of agreement and difference.

6. (*a*) Explain the difficulty of investigating complex effects. (*b*) Distinguish three conceivable modes of investigation. (*c*) Which of these alone is applicable? (*d*) Describe it in its various stages.

7. (*a*) State and illustrate the different modes of explaining the laws of nature. (*b*) To what does all such explanation ultimately amount?

8. *a*) What is an empirical law? *b*) Show that uniformities of coexistence are based on evidence similar to that of empirical laws.

9. What is (*a*) the nature of analogical evidence, (*b*) the circumstance on which its value depends?

10. Explain (*a*) the two general requisites of a philosophical language (*b*) the three subordinate conditions involved in the second.

11. Explain Mill's classification of the fallacies.

12. Are human actions subject to the law of causality? Explain Mill's answer.

13. Is there a science of psychology? State the views of Comte and of Mill on the question.

14. Why is the deductive method alone applicable to social science?

15. (*a*) Distinguish the direct and the inverse deductive methods. (*b*) Which of these is most applicable to social science?

B. A. EXAMINATION.

WEDNESDAY, APRIL 7TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D

I. PLATO'S REPUBLIC.

1. Describe the opening of the dialogue, showing especially how the subject of discussion is introduced.

2. (*a*) Sketch the description, given by Glaucon in the second book, of the perfectly unjust and the perfectly just man. (*b*) What is the theory of justice indicated in this description?

3. State (*a*) Plato's division of the faculties of the soul, and (*b*) the ethical and political doctrines based on it.

4. (*a*) Describe the position assigned to women in the Republic, and (*b*) compare it with ancient Hellenic opinions on the one hand, and modern opinions on the other.

5. Explain the analogy, which Plato draws in the eighth book, between different conditions of the state and those of the individual.

6. Is impunity better than punishment to the wrong-doer? Give Plato's answer, with its reason.

7. State the three objections to poetry, urged in the tenth book.

II. KANT'S THEORY OF ETHICS.

1. Distinguish (*a*) empirical and pure philosophy, (*b*) logic and metaphysic, (*c*) the metaphysic of nature and the metaphysic of morals, (*d*) the metaphysic of morals and practical anthropology.

2. (*a*) What alone can be called good without qualification? (*b*) Explain the reason.

3. Explain the difference between rules of skill, counsels of prudence, and laws of morality.

4. (*a*) What is meant by the categorical imperative? (*b*) Explain the three formulæ under which it may be stated.

5. (*a*) What is the source of all spurious principles of morality? (*b*) Classify these.

6. Sketch, in outline, the Dialectic of pure practical reason.

7. (*a*) What is meant by *propensity*? (*b*) Show that the propensity to evil can be referred neither to sensibility nor reason. (*c*) In what does it consist?

B.A. EXAMINATION.

KANT'S CRITIQUE OF PURE REASON.

THURSDAY, APRIL 15TH:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY, LL.D.

1. Define the terms *pure*, *a priori*, *transcendental*, and *transcendent*, as used by Kant.

2. Explain the criteria of *a priori* cognitions, whether judgments or concepts.

3. Distinguish (*a*) the *receptivity* from the *spontaneity* of the mind, (*b*) the corresponding divisions of the Critique.

4. Explain how the possibility of synthetic judgments *a priori* is established in the Transcendental Aesthetic.

5. Give the table of the categories, explaining the principle on which it is founded.

6. (*a*) What is meant by the synthetic unity of apperception? (*b*) Why is it also called the objective unity?

7. Give the schemata corresponding to the several categories.

8. State the principles which are deduced from the categories through the schemata.

9. Give the system of transcendental ideas, with an explanation of their source.

10. Give (*a*) the system of cosmological ideas, (*b*) the antithetical inferences based on them.

11. (*a*) What is the transcendental ideal? (*b*) State the various modes of inference by which it is sought to be reached.

12. (*a*) Show that these inferences are all based on one. (*b*) Sketch Kant's criticism of it.

B.A. EXAMINATION.

HISTORY OF MODERN PHILOSOPHY.

MONDAY, 19TH APRIL:—MORNING, 9 TO 12.

Examiner,.....J. CLARK MURRAY.

1. (*a*) Date the transition period between mediævalism and modern philosophy. (*b*) Describe the influences tending to revolutionise philosophy during the period.

2. (*a*) Describe the position of Lord Bacon in modern philosophy; and (*b*) name the principal empiricists between him and Locke.

3. (*a*) Explain the theological views of Hobbes. (*b*) Connect them with his political doctrines; and (*c*) show how far they anticipate the positive religion of Comte.

4. Sketch the influence of empiricism after Locke, (*a*) in England, (*b*) in France.

5 State (*a*) the characteristic points, (*b*) the defects to which Schwegler draws attention in the philosophy of Descartes.

6. Show how these defects gave a direction to the subsequent development of the Cartesian school.

7. Sketch Spinoza's practical philosophy in its connection with his metaphysical doctrines.

8. Sketch the philosophy of Berkeley, explaining especially what he means by (*a*) idea, (*b*) the existence of a thing in the mind, (*c*) its absolute existence, (*d*) Nature as a system of signs.

9. Explain Leibnitz's view of the relation between soul and body, connecting it with other points in his system, and contrasting it with the usual view on the one hand, with that of Geulincx on the other.

10. (*a*) Describe the general character of Wolff's philosophy, and (*b*) sketch in outline its divisions, theoretical and practical.

11. Mention some of the principal contributions to empiricism by British thinkers since Hume.

12. (*a*) Sketch, in general outline, Kant's Critique of the Faculty of Judgment; and (*b*) notice its bearing on the Evolution theory of our own day.

THIRD YEAR.

RHETORIC.

MONDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....VEN. ARCHDEACON LEACH, D.C.L.

1. Give an outline of the History of Rhetoric.

2. (1) Mention the special circumstances that favored the cultivation of Rhetoric among the Greeks, and (2) the differences that characterise ancient and modern eloquence.

3. Distinguish the different processes of proving and investigating.

4. (1) Explain the rule given for avoiding too wide a field of discussion. (2). In regard to facts what are the chief considerations to be attended to?

5. (1) Give the several divisions of arguments and (2) explain fully the second division (moral and demonstrative).

6. What are the objections that lie against the distribution of the several kinds of argument into the too great classes of a priori and a posteriori?

7. Distinguish Logical and Physical Sequence, and show how the terms used to indicate them occasion ambiguities.

9. In regard to testimony, mention the principal circumstances that are to be considered in estimating its value.

9. Explain the argument "from progressive approach."

10. Give the definition of "Analogy" and the remarks on the subject of "differences that do and do not nullify the analogy between two cases."

11. Mention all the principal points of the subject of "Presumption and Burden of Proof."

12. Explain the two modes of Refutation.

FRENCH, GERMAN AND HEBREW.

FRENCH.

FIRST YEAR.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,..... ....P. J. DAREY, M.A., B.C.L.

1. Translate into English:—

Je *fais* voir pour une personne toute l'ardeur et toute la tendresse qu'on *peut* imaginer; je n'aime rien au monde qu'elle; je n'ai qu'elle dans l'esprit (1); elle fait (2) tous mes soins, tous (3) mes désirs, toute ma joie; je ne parle que d'elle, je ne pense (4) qu'à elle, je ne fais des songes que d'elle, je ne respire que par elle, mon cœur *vit* tout en elle; et voilà de tant d'amitié la digne récompense! Je suis deux jours sans la voir, qui sont pour moi deux siècles effroyables; je la rencontre par hasard; mon cœur à cette vue se sent tout transporté, ma joie éclate sur mon visage, je vole avec ravissement vers elle; et l'infidèle détourne de moi ses regards, et passe brusquement, comme si de sa vie elle ne m'avait vu.

2. Who speaks in the above piece? Of whom?

(1) Give different meanings of the word *esprit* in French.

(2) Answer the same question for *fait*.

(3) To what part of speech do the different forms of *tout*, in this clause belong? To what other parts of speech does *tout* belong? Give two examples.

(4) What difference is there between *penser* and *songer?*

3. Write the positive and the negative and interrogative forms of the three verbs italicized in the above extract, in the imperfect indicative and Future tenses.

4. What are the two meanings of the verbs: *vit*, *louer*, *crût*.

5. Write the Past participles of *absoudre*, *naître*, *boire*, *coudre*, *luire*, *paître*, *prendre* and *vivre*.

6. Explain how you write the plural of the French nouns *arc-en-ciel* *petit-maître*, *coq-à-l'âne*.

7. What remark do you make about the adjectives, modifying the word *gens?* Give two examples.

8. State four cases when *I*, *thou*, *he*, *they*, are rendered by *moi*, *toi*, *lui*, *eux*. Give four examples.

9. Translate into French: *That man is dear to and cherished by his family*. Explain fully the rule.

10. Translate into French:

A man without genius is not always a poor man. An unlikely story is often an amusing story. An affected simplicity is a refined imposture. The Saracens occupied Spain during several centuries. I intend going to France next year. All those people are people who are right, and who are wiser than you. For myself I am scandalized at the life you lead. I know no longer what our house is. One would think it is Shrove Tuesday every day; and from early morning, for fear of being missed, one hears uproars of violins and singers, with which all the neighborhood is disturbed.—

INTERMEDIATE EXAMINATION.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiners,..... { P. J. DAREY, M.A., B.C.L.
PROF. M. MILLER.
PRINCIPAL C. TANNER.

1. Translate into English:

Néron. Je vous nommerais, madame, un autre nom,
Si j'en savais quelque autre au-dessus de Néron.
Oui, pour vous faire un choix où vous puissiez souscrire,
J'ai parcouru des yeux la cour, Rome, et l'empire.

Plus j'ai cherché, madame, et plus je cherche encor,
En quelles mains je dois confier ce trésor ;
Plus je vois que César, digne seul de vous plaire,
En doit être lui seul l'heureux dépositaire,
Et ne peut dignement vous confier qu'aux mains
A qui Rome a commis l'empire des humains.
Vous-même consultez vos premières années ;
Claudius à son fils les avait destinées :
Mais c'était en un temps où de l'empire entier
Il croyait quelque jour le nommer l'héritier.
Les dieux ont prononcé. Loin de leur contredire,
C'est à vous de passer du côté de l'empire.

RACINE, *Britannicus*, II, 3.

2. Translate into English :—

Hélas ! où me réduisez-vous que de me renvoyer à ce que voudront permettre les fâcheux sentiments d'un rigoureux honneur et d'une scrupuleuse bienséance ?

L'Avare, IV. 3.

What is wrong in the construction of that sentence ? Correct it.

3. How are Molière's comedies divided ? To what kind does *l'Avare* belong ? Name some other comedies which belong to the same kind.

4. Translate into English taken from *l'Avare :* Tu ne t'es point départi d'y prétendre ? Je n'ai que faire de vos dons. Un fils qui veut entrer en concurrence avec son père. Tu as l'audace d'aller sur mes brisées.

5. State four special rules to write compound nouns in French, and give an example of each.

6. Translate into French :—

Discontent, answered Rasselas, will not always be without reason under the most just and vigilant administration of affairs. None, however attentive, can always discover that merit which indigence or faction may happen to obscure ; and none, however powerful, can always reward it. Yet he that sees inferior desert advanced above him, will naturally impute that preference to partiality or caprice ; and, indeed, it can scarcely be hoped that any man, however magnanimous by nature, or exalted by condition, will be able to persist for ever in the fixed and inexorable justice of distribution : he will sometimes indulge his own affections, and sometimes those of his favourites : he will permit some to please him who can never serve him ; he will discover in those whom he loves qualities

which in reality they do not possess; and to those from whom he receives pleasure, he will in his turn endeavour to give it. Thus will recommendations sometimes prevail which were purchased by money, or by the more destructive bribery of flattery and servility.

JOHNSON'S, *Rasselas.*

7. In what year of his reign did Nero first show his true nature? What brought about this change in his conduct? In what respects does Nero's subsequent reign compare unfavorably with the first three years of his reign.

8. Write the *Pres. Ind.* and *Past Indef.* of s'abstenir affirmatively, negatively, interrogatively, interrogatively and negatively.

9. Translate into French the following sentences, and give the rules according to which the Past Participles have to be written: I have received the letters which you have written to me about the affair which I had proposed to you. The clothes he had made by his tailor. She is a fine singer, I heard her sing at the last concert.

10. How do you translate the word *before* into French when an adverb a preposition, a conjunction? What difference is there between *quoique* and *quoi que; quand* and *quant?*

11. State the difference between the historiography of the middle ages and the XVI. century. Name the principal historians of the middle ages and of the XVI. century, together with their works.

12. Who were the authors of: *les Essais, l'Institution de la Religion Chrétienne, l'Art Poétique, Cinna, Bérénice, Télémaque, Discours sur la Méthode, les Provinciales?* Say a few words on those different works.

13. How are the poetes of the *langue d'oc* called? What works have they written? Name three of them, with dates.

THIRD YEAR.

FRIDAY, APRIL 16:—MORNING, 9 TO 12.

Examiner,.....P. J. DAREY, M.A., B.C.L.

Les réponses devront être faites en français.

1. Traduisez en anglais:

Ce grand cœur qui paraît aux discours que tu tiens,
Par tes yeux, chaque jour, se découvrait aux miens;
Et croyant voir en toi l'honneur de la Castille,

Mon âme avec plaisir te destinait ma fille.
Je sais ta passion, et suis ravi de voir
Que tous ses mouvements cèdent à ton devoir ;
Qu'ils n'ont point affaibli cette ardeur magnanime ;
Que ta haute vertu répond à mon estime ;
Et que voulant pour gendre un cavalier parfait,
Je ne me trompais point au choix que j'avais fait.
Mais je sens que pour toi ma pitié s'intéresse ;
J'admire ton courage, et je plains ta jeunesse.
Ne cherche point à faire un coup d'essai fatal ;
Dispense ma valeur d'un combat inégal ;
Trop peu d'honneur pour moi suivrait cette victoire ;
A vaincre sans péril, on triomphe sans gloire.
On te croirait toujours abattu sans effort ;
Et j'aurais seulement le regret de ta mort.

Le Cid.

2. Qui est-ce qui parle dans le morceau ci-dessus? A qui ? Faites-nous connaître les circonstances qui amenèrent cette entrevue entre ces deux personnages.

3. Ecrivez un aperçu aussi complet que possible de la tragédie du Cid.

4. Faites un résumé de la vie de Corneille. Nommez six de ses pièces et dites lesquelles sont considérées comme les meilleures. Quelle comédie a-t-il écrite ?

5. Quels sont les quatre écrivains les plus remarquables du XVIIIme siècle ? Faites connaître leurs principaux ouvrages.

6. Même question pour le XIXme siècle.

7. Traduisez en français :

As I was meditating one day, in a coffee house, on the fate of my paradoxes, a little man, happening to enter the room, placed himself in the box before me, and, after some preliminary discourse, finding me to be a scholar, drew out a bundle of proposals, begging me to subscribe to a new edition he was going to give to the world of Propertius, with notes. This demand necessarily produced a reply, that I had no money; and that concesssion led him to inquire into the nature of my expectations. Finding that my expectations were just as great as my purse,—"I see," cried he, "you are unacquainted with the town. I will teach you a part of it. Look at these proposals; upon these very proposals I have subsisted very comfortably for twelve years. The moment a nobleman returns from his travels, a Creolian arrives from Jamaica, or a dowager from her country-seat, I strike for a subscription.

The Vicar of Wakefield.

B. A. EXAMINATION.

TUESDAY, APRIL 20TH.

Examiners, ... { P. J. DAREY, M.A., B.C.L. / PROF. M. MILLER.

1. Traduisez en anglais :

Sabine. Revoyons les vainqueurs sans penser qu'à la gloire.
Que toute leur maison reçoit de leur victoire ;
Et, sans considérer aux dépens de quel sang
Leur vertu les élève en cet illustre rang,
Faisons nos intérêts de ceux de leur famille :
En l'une je suis femme, en l'autre je suis fille ;
Et tiens à toutes deux par de si forts liens
Qu'on ne peut triompher que par les bras des miens.
* * * * * * *
Flatteuse illusion, erreur douce et grossière,
Vain effort de mon âme, impuissante lumière,
De qui le faux brillant prend droit de m'éblouir,
Que tu sais peu durer, et tôt t'évanouir !
Pareille à ces éclairs qui, dans le fort des ombres,
Poussent un jour qui fuit et rend les nuits plus sombres,
Tu n'as frappé mes yeux d'un moment de clarté,
Que pour les abîmer dans plus d'obscurité.
Tu charmais trop ma peine, et le ciel, qui s'en fâche,
Me vend déjà bien cher ce moment de relâche.
Je sens mon triste cœur percé de tous les coups
Qui m'ôtent maintenant un frère ou mon époux.
Quand je songe à leur mort, quoi que je me propose,
Je songe par quels bras, et non pour quelle cause ;
Et ne vois les vainqueurs en leur illustre rang
Que pour considérer aux dépens de quel sang.
La maison des vaincus touche seule mon âme ;
En l'une je suis fille, en l'autre je suis femme,
Et tiens à toutes deux par de si forts liens,
Qu'on ne peut triompher que par le mort des miens.

CORNEILLE, *Horace, III.*, 1

2. Traduisez en français :

Le Beau. Good sir, I do in friendship counsel you
To leave this place. Albeit you have deserv'd
High commendation, true applause, and love.
Yet such is now the duke's condition,

That he misconstrues all that you have done.
The duke is humorous ; what he is, indeed,
More suits you to conceive than I to speak of.

Orlando. I thank you, sir ; and pray you, tell me this,
Which of the two was daughter of the duke,
That here was at the wrestling?

Le Beau. Neither his daughter, if we judge by manners ;
But yet, indeed, the smaller is his daughter :
The other is daughter to the banish'd duke,
And here detained by her usurping uncle,
To keep his daughter company ; whose loves
Are dearer than the natural bond of sisters.
But I can tell you, that of late this duke
Hath ta'en displeasure 'gainst his gentle niece,
Grounded upon no other argument
But that the people praise her for her virtues,
And pity her for her good father's sake.
And, on my life, his malice 'gainst the lady
Will suddenly break forth.

SHAKESPEARE, *As You Like It*, 1, 2.

3. Expliquez les mots ; dictateur, enfers, oracle, sénat, tyran, les colonnes d'Hercule, un autre soi-même.

4. Donnez les règles qui s'attachent aux mots soulignés des propositions suivantes : Il est peu de nos fils qui ne *soient* vos neveux. Fais-toi des ennemis que je *puisse* haïr. Vous savez pour la paix quels vœux a *faits* mon âme. Si vous n'êtes Romain, soyez digne de *l'*être. Qui n'y voit rien d'obscur doit croire que tout *l'*est. C'est un raisonnement bien mauvais *que* le vôtre.

5. Comparez le caractère d'Horace avec celui de Curiace, et faites-nous savoir quelle conclusion vous en tirez quant au résultat de leur combat.

6. Quelle position Villon, Marot, DuBellay, Ronsard, Du Bartas, Desportes, Bertaut, Malherbe et Racan occupent-ils dans la littérature française? Quels sont leurs mérites, ou leurs défauts? Quel en est le jugement de Boileau dans son Art Poétique ?

7. Expliquez le titre de la comédie *les faux bonshommes?* Qu'est-ce que l'auteur décrit dans cette comédie ?

8. Traduisez en anglais : En voilà un drôle de bonhomme ! il commence toujours par dire du bien des gens, et puis il vous les arrange qu'ils ne sont plus bons à jeter aux chiens. Il a fallu qu'il fît venir ces deux artistes à la

compagne. (1) Je n'ai pas la vanité de me poser en grand seigneur, moi! quoique bien d'autres (2) avec ma fortune...Je ne tenais (3) pas à tant cela.

(1) Quelle différence y a-t-il entre *à la compagne*, *dans la compagne* et *en compagne?* Comment expliquez-vous la suppression de l'article après bien? Expliquez les différentes expressions: cela vous tient au cœur; il tient à son opinion; je tiens à y aller; il ne tient qu'à vous; qu'à cela ne tienne! Sa maison tient à la mienne; je n'y tiens plus.

9. Qui est-ce qui a composé la comédie *l'Honneur et l'Argent?* Où naquit-il? Quelles tragédies a-t-il composées? Quel but l'auteur s'est-il proposé dans *l'Honneur et l'Argent?*

10. Traduisez en anglais:

J'étais au ministère où l'on parla de vous:
Pourquoi, me disait-on ne vient-il pas à nous?
Il ne sied pas aux fils des grands propriétaires
De vivre comme il fait, en dehors des affaires
Voyez-le; dites lui que nous lui trouverons
Un poste convenable, où nous le pousserons
—Une sous-préfecture.

L'Honneur et l'Argent, A. I, s. 1.

11. Faites un court résumé biographique de Mme. de Staël et de Chateaubriand. Nommez quatre ouvrages de ces deux auteurs. Faites connaître ces ouvrages.

12. Quels sont les six romanciers contemporains les plus remarquables? Quels sont leurs meilleurs ouvrages?

GERMAN.

JUNIOR CLASS.

TUESDAY, APRIL 20TH:—MORNING, 9 TO 12.

Examiner, ...C. F. A. MARKGRAF, M.A.

1. Translate into English:—

(A) Sagt mir, ihr holden Töchter der rauhen, ſchwarzen Erde, wer gab euch eure ſchöne Geſtalt? Denn wahrlich von niedlichen Fingern ſeid ihr gebildet. Welche kleinen Weiſter ſtiegen aus euren Kelchen empor? Und welch Vergnügen fühltet ihr, da ſich Göttinnen auf euren Blättern wiegten? Sagt mir, friedliche Blumen, wie theilten ſie ſich in ihr erfreuend Geſchäft, und winkten einander zu, wenn ſie ihr feines Gewebe ſo vielfach ſpannen, ſo vielfach zierten und ſtickten?

Aber ihr schweigt, holdselige Kinder, und genießet eures Daseins. Wohlan! mir soll die lehrende Fabel erzählen, was euer Mund mir verschweiget.

Als einst, ein nackter Fels, die Erde da'tand, siehe, da trug eine freundliche Schaar von Nymphen den jungfräulichen Boden hinan, und gefällige Genien waren bereit, den nackten Fels zu beblümen. Vielfach theilten sie sich in ihr Geschäft.

Herder, die Lilie und die Rose.

(B) „Was hör' ich draußen vor dem Thor,
Was auf der Brücke schallen?
Laß den Gesang vor unserm Ohr
Im Saale wiederhallen!"
Der König sprach's, der Page lief;
Der Knabe kam, der König rief:
„Laßt mir herein den Alten!"

„Gegrüßet seid mir, edle Herrn,
Gegrüßt ihr, schöne Damen!
Welch reicher Himmel! Stern bei Stern!
Wer kennet ihre Namen?
Im Saal voll Pracht und Herrlichkeit
Schließt, Augen, euch; hier ist nicht Zeit,
Sich staunend zu ergötzen."

Der Sänger drückt die Augen ein
Und schlug in vollen Tönen;
Die Ritter schauten muthig drein,
Und in den Schooß die Schönen.
Der König, dem das Lied gefiel,
Ließ, ihn zu ehren für das Spiel,
Eine goldne Kette reichen.

Goethe, der Sänger.

2. (*a*) Give the four cases Singular of:—der rauhen, schwarzen Erde, eine goldne Kette. (*b*)Decline in both numbers:—welche kleinen Geister; holdselige Kinder; ihr erfreuendes Geschäft; edle Herren; schöne Damen. (See Ext. A & B.)

3. Töchter, Fingern, Kelchen, Blättern, Göttinnen, Blumen, Thor, Boden Gesang, Ohr, Saale, König, Knabe, Himmel, Stern, Zeit, Herrlichkeit, Augen Sänger, Lied, Spiel, Feinde. (See Ext. A & B.)—Show which of the above nouns belong to the *strong*, and which to the *weak* declension and state the subdivision.

4. Parse the following verbs, and give the other irregular forms and

the Present Infinitive of each :—gab, ſeid, ſtiegen empor, ſpannen, daſtand trug, ſprach lief, kam, rief, kennet, ſchlug, gefiel, ließ. (See Ext. A & B.)

5. Da ſich Göttinnen auf euren Blättern wiegten.—(*a*) Why is the verb here placed at the *end* of the sentence? Explain. (*b*) Give all persons Sing. and Plu. of the Imperfect and Perfect Indicative of „ſich wiegten." (*c*) auf euren Blättern.—What other case does „auf" govern, and when? State other prepositions used in like manner.

6. Beblümen, verſchweiget.—What kind of verbs? How are such verbs formed? How many kinds of verbs are there in German, as regards their formation?

7. Der König, dem das Lied gefiel.—(*a*) Substitute the relative pronoun for „dem." (*b*) Decline der, die, das, when used as relative pronouns.

8. Conjugate denken and abgehen, giving the 3rd Sing. and the 2nd Plural of all tenses of the Indicative.

9. Translate into German :—

Pines and oaks are forest-trees. The reading of good books strenghtens the mind. (The) childhood is the spring and (the) *old* age the winter of life. The fruit, which you see there, is not yet ripe. We were not at home when the messenger arrived. He left the room a few minutes ago, and promised to be back in half an hour. We shall take the eight o'clock train, in order to reach (the) town at half-past ten to-night. They communicated the important news only to their best friends. I live at present at my brother's house. This is the young artist of whom you have heard so much, and who has just returned from Munich.

INTERMEDIATE EXAMINATION.

THURSDAY, APRIL 15TH :—MORNING, 9 TO 12.

Examiner,.....C. F. A. MARKGRAF, M.A.

I. Grammar.

1. Illustrate the government of adjectives by translating the following sentences :—The child resembles his father—it is of value to me—these people are in want of your assistance—he is faithful to his friends—are you mindful of your promise—they are conscious of their power (Macht, f.)

2. (*a*) Which verbs require to be followed by the Nominative? (*b*)

Write down *six* verbs which govern the Genitive or Accusative, and (*c*) *six* which govern the Dative. (*d*) How can verbs governing the Dative be used *passively?* Add short examples to *a*, *b*, *c* and *d*.

3. (*a*) When is the Present Infinitive *active* used in German instead of the English Present Infinitive *passive?* Give examples. (*b*) When is the English word *to* before the Infinitive *not* expressed by zu in German? Give three examples.

4. Translate into *idiomatic* German:—He is in the habit of saying—they thought of going there to-morrow—you spoke to him without knowing him—he came walking—may I go—they succeed in it—we are sorry for that—I suppose it is a mistake.

5. (*a*) When is the English preposition *of* rendered by a *preposition* in German? Enumerate all cases, adding examples. (*b*) Which prepositions can only be used in answer to the questions: *where?* or *whither?*

6. Translate, and state rules for the construction of:—Käme er doch bald wieder! du ſprichſt und ihr ſchweigt! Wir wohnen ſeit fünf Jahren hier. Morgen komme ich wieder. Sie blieben ſitzen. Ihr hättet ſchreiben ſollen.

II. Translate from Lessing's „Minna von Barnhelm":—

Act I., Scene 8, Pages 14–15 (Parts indicated).

Act II., Scene 3, Page 31.

(*a*) State briefly the historical events on which this play is founded, and give an outline of its plot. What object is *Lessing* believed to have had in view in writing this drama? Give the date of its completion, and point out its merits.

III. Translate into German:—

Cotton is the fruit of a tree, and silk the work of an insect. Walking and riding are wholesome exercises. The late (verſtorben) minister enjoyed the full confidence of his king till (bis an, Acc.) his death. The prisoners were acquitted from all guilt. The buyer called the seller a deceiver because the latter had sold him the wares too dear. He told me he must set out on a journey to-morrow. I often think of the pleasant days (which) we spent (verleben, Perf.) together. Place the chairs in (an, Acc.) the places where they usually stand, and place yourself by (an, Acc.) the window in order to see if (ob) our friends are coming. I (have) left the books *lying* (lie) on the table. When I returned, I found no one at home The weak are generally compelled to yield to the strong. The long-expected stranger arrived an hour ago.

IV. Literature.

1. Explain that peculiar form of ancient German poetry known as '*alliteration.*' Name the *alliterative* poems handed down to us from the Frankish period. What other poems of the same period can you mention as marking the transition from *alliterative* to *rhymed* poetry?

2. Describe the character of the "*Minnegesang.*" Give the name and state the duration of the era during which it flourished.

3. Give an account of the prose literature of the Mediæval period.

4. Notice the effect produced in the spiritual life of the German people of the memorable events and momentous changes which took place during the 14th and 15th centuries.

EXAMINATION FOR THE LORNE MEDAL.

THIRD YEAR.

MONDAY, APRIL 26TH:—MORNING, 9 TO HALF-PAST 12.

Examiner,.....C. F. A. MARKGRAF, M.A.

I. Grammatik.

1. Geben Sie ausführlich die Klassen von Substantiven an, die zur zweiten (oder neuen) Deklination gehören, und stellen Sie durch Beispiele die Kasusendungen des Singulars und Plurals dieser Deklinationsform dar.

2. Weisen Sie deutsche und fremde Substantiven vor, die im Singular in der alten, und im Plural in der neuen Form dekliniren.

3. Erklären Sie die mangelhafte Deklinationsform.

4. Uebersetzen Sie mit Angabe der Regeln für die deutsche Konstruktion:—(*a*) the deserts of Africa; Alexander the Great's history; the crusade of Emperor Frederick; Mr. Smith's house;—(*b*) a man of high rank and great virtue; the king's choice of a minister;—(*c*) the enemies, the mighty, prevail; he has betrayed the king, his master;—(*d*) to those for whom eternal freedom is waiting; dost thou hear it ring with mighty sound? he gave many festivals in his honor; they died the death of the free.

5. Zählen Sie die Fälle auf, die sich auf die Konstruktion des Dativs mit Verben beziehen, und beleuchten Sie jeden besondern Fall durch Beispiele.

6. Erklären Sie den Gebrauch des Akkusativs in absoluter Konstruktion.

7. Unter welchen Bedingungen können einige Adjektiven, die hier zu erwähnen sind, den Akkusativ des Objektes regieren?

8. Erklären Sie den Gebrauch des Subjunktivs im konditionalen und potentialen Sinne.

9. Erläutern Sie durch Beispiele die Konstruktion des Infinitivs als Subjekt eines Satzes.

II. Literatur.

1. Geben Sie eine kurze Lebensskizze von Lessing. Berichten Sie, mit Angabe der Data, was Ihnen über den Plan und Zweck seiner zwei Dramen 'Emilia Galotti' und 'Nathan der Weise' bekannt ist. Heben Sie seine Verdienste als Kritiker hervor, und nennen Sie sein größtes Werk in dieser Richtung.

2. Geben Sie eine kurze Schilderung der 'Sturm und Drangperiode,' und erwähnen Sie der Schriftsteller, welche unter den 'Originalgenies' am bedeutendsten hervortreten.

3. Was können Sie über die literarische Tendenz des 'Göttinger Dichter- oder Hainbundes' und über die vorzüglichsten Mitglieder desselben aussagen?

4. Erzählen Sie die Hauptereignisse aus Goethe's Leben. Nennen Sie die Werke, die seine frühere Betheiligung bei der vorherrschenden Richtung der Drangperiode bekunden.—Schreiben Sie kurze Notizen über 'Egmont 'Iphigenia,' und 'Tasso.'

5. Nennen Sie Schiller's vorzüglichste lyrische Gedichte und Balladen.

6. Kontrastiren Sie Goethe und Schiller in Hinsicht auf ihren physischen und intellektuellen Charakter.

7. Nennen Sie die Autoren der folgenden Werke:—Hesperus, Genoveva, Undine, Des Knaben Wunderhorn, Aus dem Leben eines Taugenichts, Die Ahnfrau, Leyer und Schwert, Peter Schlemihl.

8. Charakterisiren Sie Rückert, Platen und Heine.

EXAMINATION FOR THE LORNE MEDAL.

THIRD YEAR.

MONDAY, APRIL 26TH:—AFTERNOON, 2 TO HALF-PAST 5.

Examiner,.....C. F. A. MARKGRAF, M.A.

I. Uebersetzen Sie aus Schiller's „Wilhelm Tell":—

2. Aufzug; 2. Scene. (die auf Seiten 58, 60, 61, 62 und 63 bezeichneten Stellen.)

1. Wann, und unter welchen Umständen, wurde dieses Drama vollendet?

2. Beschreiben Sie kurz die Vorgänge, die sich in der obengenannten Scene entwickeln, und geben Sie den wesentlichen Inhalt von Stauffacher's Rede zu Rütli.

3. Vergleichen Sie Schiller's Begriffe von politischer Freiheit, wie sie in seinem ersten Drama „Die Räuber" und in „Wilhelm Tell" Ausdruck finden.

4. Was läßt sich über Tell und Gessler historisch nachweisen?

II. Uebersetzen Sie aus Wieland's „Geschichte der Abderiten" Seite 41.

1. Heben Sie diejenigen Theile dieses antiken Romans hervor, die einer besonderen Beachtung werth sind.

2. Hat Wieland in diesem Werke eine wahre Schilderung des Lebens in Altgriechenland beabsichtigt, oder lag ein anderer Zweck vor?

3. Machen Sie kritische Bemerkungen über den Styl und Charakter seiner Schriften; und nennen Sie die bedeutendsten derselben.

4. Zeigen Sie welche Verdienste er sich um die Ausbildung der deutschen Sprache und Literatur erworben hat.

III. Uebersetzen Sie aus dem „Cid" Seiten 23 und 41.

1. Geben Sie die Data von Herder's Geburt und Tod, und eine kurze Übersicht seiner besten Werke.

2. Welchem Ziele hat dieser Autor in seinen literarischen Arbeiten zugestrebt, und welchen Einfluß hat sein Beispiel auf gleichzeitige Schriftsteller geäußert?

IV. Ueberſetzen Sie ins Deutſche:—

Besides the general summons of the 'Heerbann,' there was among the ancient Germans a 'companionship in arms,' founded upon a voluntary union, which was called the 'Gefolge,' the reserve phalanx or sacred battalion. Warlike youths collected themselves around their most tried and esteemed leader, and swore in union with him to live and die. There was much contention among this *Gefolge* who should take the first place next to the leader, for this corps had its grades. It was high fame for a leader, not merely among his own tribes, but among all the adjacent *ones*, when he was distinguished by the number and valor of his *Gefolge*. He was appealed to for assistance; embassies were sent to him, he was honored by presents, and the mere celebrity of his name would frequently check a war. In battle it was considered a disgrace to the chief to be outvied in valor, and to the *Gefolge* not to equal that of their leader; but to return alive from battle, after the death of the chieftain, was a stigma that attached for life to the individual, and their fidelity was so great, that scarcely an instance of this occurred. It was considered the most sacred duty to protect and defend their brave brother-in-arms, and to attribute their own valorous deeds to his fame. The leaders contended for victory, and the *Gefolge* for the leaders.

Kohlrausch, *History of Germany*.

HEBREW.

SENIOR CLASS.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,.....REV. A. DE SOLA, LL.D.

1. Conjugate the irregular verb חסר in the Kal. preterite and future, and in the Niphal preterite.

2. Translate Psalms III and IV.

3. Analyze in Psalm III. the first six verses, more fully explaining בברחו הקיצותי and ואישנה, מרים, וישועתה

4. Conjugate the regular verb למד in the preterite tenses of all the seven forms.

5. Show how the various forms of Segholates exhibited by Gesenius and the old Hebrew Grammarians may be included in one general description; give the rules for distinguishing mutable and immutable vowels, and show how these affect the formation of the construct singular of masc. nouns.

6. Conjugate the irregular verb מצא in the future tenses of Kal, Niphal and Piel forms.

7. Write out the noun (fem.) שמחה in singular and plural numbers with pronominal fragments.

8. Give the rules for ו conversive and consecutive; show how it is pointed before the preterite and future, respectively, and its effect on accent.

9. Show the effect of the definite article on adjectives accordingly as it is used or omitted; add examples, and give general rules for adjectives in connection with nouns.

10. Translate into Hebrew:—

The delight of the good man is the law of God, and in it he meditates day and night. Not so with the wicked man; therefore he shall not stand up at the judgment. Then serve the Creator with fear, and rejoice in him. He will be a shield for you, your honor and the exaltation of your head. He will speak to those who rise up against you; in his anger and in his fierce wrath will he confound them.

11. Translate into English:

בני איש עד מה כבודי לכלמה תאהבון ריק תבקשו כזב ודעו כי הפלה ה חסיד לו ה ישמע בקראי אליו נתהה שמהה בלבי מעת דגנם ותירושם רבו בשלום יחדו אשכבה ואישן כי אתה ה לבדד לבטח תושיבני׃

JUNIOR CLASS.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiner,.....REV. A. DE SOLA, LL.D.

1. Give one general rule for the identification of Segholates, notwithstanding the variety of vowels exhibited by them; also the general rule affecting the formation of their construct case in the singular.

2. Show the changes undergone by the definite ה when preceding a guttural letter, also when combined in a contracted form with the prepositions בכלם; give examples.

3. State the general principles affecting the formation of the construct cases of masculine nouns in the singular, more especially with reference to the employment in the nominative of mutable and immutable vowels; explain the latter.

4. Give, with examples, the terminations of nouns in the masc. pl; in the dual; and in the feminine, singular and plural.

5. Add all the pronominal fragments to a noun, *e. g.*, שור in the singular number; and give the personal pronouns in their absolute forms.

6. Write, with examples, the rules for adjectives in connection with nouns; show what effect the employment or omission of the definite article in connection with the adjective has on its meaning.

7. Write out a noun with an adjective and the pronominal fragments, (*e. g.*, סוסי הטוב) in both numbers.

8. Conjugate the verb למד in *kal* form, in all moods and tenses.

9. Translate into Hebrew:

This is not the city nor is this the house which I have built. This is my little son, and this is my little daughter. Who (art) thou my son, and what is thy name? These are the brothers of my father, and these are the sisters of my mother. I am thy father and thou art my son. He is a wise man and a great king. With our sons and with our daughters, with our flocks and with our herds, we will go.

10. Translate into English.

ויאמר ה אל משה נטה את ידך על השמים ויהי ברד בכל ארץ מצרים על האדם ועל הבהמה ועל כל עשב השדה בארץ מצרים ויט משה את מטהו על השמים וה נתן קלת וברד ותהלך אש ארצה וימטר ה ברד על ארץ מצרים:

CHEMISTRY AND NATURAL SCIENCES.

FIRST YEAR IN ARTS AND APPLIED SCIENCE.

CHEMISTRY.

TUESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Give the general characteristics of the metals, and distinguish between alloys and amalgams.

2. By what tests would you distinguish between Ferrous and Ferric belts, when in solution?

3. Distinguish between Sulphides, Sulphites and Sulphates.

4. Give three tests for the detection of Orthophosphoric Acid.

5. What is the composition of Cream-of-tartar, Camphor, Borax, Oil of Vitriol, and Nitre?

6. Give the composition and properties of Starch, and state how it may be converted into Dextrine and Glucose.

7. What are the names and formulæ of the Vegetable Acids? Describe their mode of occurrence in plants, and the preparation of one of them.

8. Explain the theory of Chemical Types, and give the typical formulæ of Sodic Chloride, Hydric Sulphide, Alcohol and Aniline.

9. Name the substances indicated by the following formulæ, and calculate the percentage composition of one of them:

$CuSO_4 . 5H_2O$	$(H_4N)_2\ CO_3$
$CaCl_2$	SiO_2
$NaHCO_3$	$CHCl_3$

10. Describe the principal operations involved in taking an ordinary photograph by the Collodion process.

INTERMEDIATE EXAMINATION.

BOTANY.

FRIDAY, APRIL 16TH:—MORNING, 9 TO 12.

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. Mention the principal natural compounds important as food for plants.

2. State some of the causes of the preference of plants for particular soils and of the exhaustion of soils.

3. Explain Cohesion of the parts of the Flower with examples.

4. Describe the parts concerned in fertilization.

5. What are the structures indicated by the terms Raceme, Umbel, Legume, Samara, Bract; give examples.

6. Describe any kind of Sporangium, and state the difference between Spores and Seeds.

7. Describe the Embryo of a Dicolyledonous Seed and the process of its germination.

8. How could you distinguish a Cryptogam from a Phaenogam, and in the latter an Exogen from an Endogen.

9. Trace any Canadian plant through the grades of the classification rom the Series to the Species.

10. State the place in the natural system of the genera *Lycopodium*, *Pinus* *Ranunculus*, *Equisetum*, *Carex*, *Lilium*.

11. Describe the parts of the flower exhibited, and the modifications which they present.

THIRD YEAR AND SECOND YEAR APPLIED SCIENCE.

ZOOLOGY.

THURSDAY, APRIL 15TH:—9 A.M. TO 12.

Examiner,.....J. W. DAWSON, LL.D., F.R.S.

1. What group of *Protozoa* may be regarded as the highest in rank? Define it, and give examples.

2. To what class of animals do *Millepora* and *Sertularia* belong? State their resemblances and differences.

3. Into what two groups may the class *Anthozoa* be divided, and on what grounds?

4. Mention some important groups of fossil *Hydrozoa* and *Anthozoa* not now found living.

5. Define the class *Brachiopoda*, and mention some recent and fossil families.

6. Describe the structures of any animal of the class *Lamellibranchiata*.

7. What are the leading sub-divisions of the *Crustacea*. Give examples of each, recent and fossil.

8. Describe the metamorphosis of an Insect.

9. Give the orders of Birds or Fishes, with examples, and describe one.

10. Characterize the class *Mammalia*, and state the distinctions of its three leading sub-divisions, with examples.

11. Describe, and refer to their Province and Class, the specimens exhibited.

B.A. AND THIRD YEAR SCIENCE ORDINARY EXAMINATIONS.

GEOLOGY.

TUESDAY, APRIL 13TH:—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. What are the evidences of the existence of Animal and Vegetable Life in the Laurentian Period?

2. Tabulate the Lower Silurian formations in the district of Montreal, and mention their characteristic fossils.

3. By what characteristic fossils could you distinguish the Niagara, Corniferous and Lower Carboniferous formations?

4. Give the subdivisions of the Mesozoic Rocks in Western Europe, and their equivalents in North America.

5. In what formations do the oldest land plants occur, and to what botanical classes and orders do they belong?

6. State in order the Upper Silurian formations represented in Canada, with their general geographical distribution.

7. State the subdivisions of the Carboniferous in Nova Scotia, and their equivalents in Europe.

8. State in tabular form the zoological (or botanical) and geological relations of *Favosites*, *Calamites*, *Productus*, *Palæotherium*, *Sigillaria*, *Nummulites*, *Paradoxides*, *Palæoniscus*, *Ichthyosaurus*.

9. How are the Cainozoic formations subdivided? Describe any typical formation of the earlier part of this age with its characteristic fossils.

10. State the general sequence of events, and of formations deposited in the Northern Hemisphere, from the Newer Pliocene to the Modern Period.

11. How would you proceed in making a geological reconnaissance of an unknown district?

12. State what you know of the fossils exhibited, and their respective ages.

13. Describe the characters and distribution of the Cretaceous and Tertiary of the Western Territories of the Dominion.

B.A. AND THIRD YEAR SCIENCE ORDINARY EXAMINATIONS.

MINERALOGY AND LITHOLOGY.

TUESDAY, APRIL 13TH :—AFTERNOON, 2 TO 5.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. Name the more important ores of Silver, and describe one of them.

2. To what mineral species do the following substances belong :—Asbestus, Emery, Muscovy Glass, Bloodstone, Carbonado, Alabaster?

3. Give the general characters of the Feldspars, and describe one member of the group fully.

4. Name the minerals indicated by the following formulæ, and give the crystalline form of each :—

Fe_3O_4	$Zn\,S$
$Sn\,O_2$	Al_2O_3
Cu_2S	$CaCo_3$

5. What are the principal characters relied upon in distinguishing precious stones?

6. Describe Siderite, Apatite, Fluorite and Chalcopyrite. How do these minerals occur in nature?

7. Explain porphyritic and amygdaloidal textures, and give examples of rocks which frequently exhibit them.

8. Distinguish between Slate and Shale, Granite and Gneiss, Breccia and Conglomerate.

9. Explain the terms Volcanic, Plutonic, Eruptive, Sedimentary.

10. What are the constituent minerals of Trachyte, Basalt and Diorite?

11. Name and describe the specimens exhibited.

THIRD YEAR HONOURS.

MINERALOGY.

FRIDAY, APRIL 23RD :—MORNING, 9 TO 12.

Examiners, ... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH. D.

1. Define isomorphism, hemimorphism and hemihedrism. Distinguish also between inclined and parallel hemihedrons.

2. Explain the following expressions for planes of orthorhombic crystals:

a : b : ∞ c	∞ a : b : mc
na : b : ∞ c	a : ∞ b : mc
a : nb : ∞ c	

3. To what are the striations on the prismatic faces of a Quartz crystal due? To what the striations often displayed by triclinic Feldspars?

4. What do you understand by a zone, a brachypinacoid, a hemiorthodome, and a hemioctahedron?

5. Give the chemical composition, crystalline form, and blowpipe characters of the following minerals:—

Azurite	Prehnite.
Arsenopyrite	Tourmaline.
Anorthite	Menaccanite.

6. Describe the more important Magnesian Silicates. How do they occur in nature?

7. What are the principal ores of Copper and Iron occurring in Canada, and in what geological formations are they found?

8. How would you distinguish Oriental Ruby from Spinel Ruby, Emerald from Ouvarovite, Topaz from Citrine and Topazolite?

9. How is the presence of Chlorine, Phosphoric Acid, Chromium and Sulphur most readily detected in minerals?

10. Name the minerals exhibited, giving in every case the ground of your determination.

Determination of minerals in the Laboratory, afternoon, 2 to 5.

LITHOLOGY.

MONDAY, APRIL 26TH:—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PH.D.

1. Name the minerals which form the most important constituents of the eruptive rocks. Give a classification of these rocks.

2. What are Travertine, Pozzuolana and Kaolin? What their origin?

3. Define the terms acidic and basic, older and younger, as applied to eruptive rocks.

4. How would you distinguish Dolomite from Limestone? In what geological formations in Canada are Dolomites most abundant?

5. What are the geological relations of Norite, Diorite and Ophiolite?

6. What are the constituent minerals of Aplite, Syenite, Phonolite and Diabase?

7. Describe Argillite, Marl, Itacolumite and Quartzite.

8. Upon what does the durability of rocks employed for purposes of construction chiefly depend?

9. State what you know of the rock specimens exhibited.

B. A. HONOURS IN NATURAL SCIENCE AND FOURTH YEAR IN MINING.

MINERALOGY.

WEDNESDAY, MARCH 31ST:—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. Point out fully the differences in the constitution of unisilicates and bisilicates.

A mineral contains SiO_2 54.50, FeO 1.98, Mg.O 18.14, CaO 25.87. Calculate its atomic and quantivalent ratios and its formula.

2. Name the principal varieties of Pyroxene and Hornblende, and point out the distinguishing characters of the two species.

3. Give the crystalline form, hardness and specific gravity of Chrysolite, Labradorite, Staurolite, and Barite. What are the geological relations of these minerals?

4. How would you distinguish Pyrargyrite from Cinnabar, Tourmaline from Hornblende, Lepidolite from Muscovite, and Turquois from Malachite?

5. Classify the different varieties of Mineral Coal, and give the characters of each variety.

6. What is the composition of Manganite, Witherite, Prase, Cacholong, Wernerite, and Stilbite?

7. Name the minerals of which the following are the formulas, and calculate the percentage composition of two:—

$Zr\,SiO_4$	$Fe\,S_8$
$CaSO_4 + 2aq$	MoS_2
$3\,Pb_3P_2O_8 + Pb\,Cl_2$	Cu_2S

8. Give the mode of occurrence and the principal uses of Sphalerite Pyrolusite, Asbestus, Apatite and Muscovite.

9. Name the minerals exhibited, and give the chemical composition of four of them. Describe also the crystalline forms of any four.

GEOLOGY AND PALAEONTOLOGY (in part).

THURSDAY, APRIL 8TH:—9 A.M. TO 12, AND 2 TO 5 P.M.

Examiners,..... J. W. DAWSON, LL.D., F.R.S. / B. J. HARRINGTON, B.A., Ph.D.

1. State the subdivisions and general distribution of the Laurentian and Huronian in Canada.

2. Describe the Silurian formations as occurring in the vicinity of Montreal and Quebec.

3. Draw a section across the strike of the formations in Ontario, and describe the formations intersected.

4. State the formations traversed by the Intercolonial Railway between Metis and Halifax.

5. What are the European equivalents of the Acadian, Trenton, Niagara, Levis, Corniferous. State the evidence of equivalency in the case of one of them.

6. Tabulate the Upper Silurian of Ontario, with characteristic Fossils.

7. Name the genera of Corals characteristic of the Corniferous. Describe one.

8. To what ages do the following genera of Trilobites belong:

Parodoxides,	Olenus.
Phillipsia,	Phacops.
Agnostus,	Calymene.
Homalonotus.	

9. What genera and species are specially characteristic of the Lower Helderberg Formation in Eastern Canada.

10. Name the leading genera of Palæozoic Plants, stating which appear in the Silurian and Devonian, and on what horizons.

11. State fully the geological and zoological relations of the following genera: Receptaculites Stenopora, Stromatopora, Phyllograptus, Beatricea, Zaphrentis, Dinichthys, Pterygotus.

EXAMINATION ON SPECIMENS.

Refer the specimens exhibited to their geological formations, and state their zoological or botanical affinities.

GEOLOGY AND PALÆONTOLOGY (in part).

TUESDAY, APRIL 20TH:—9 A.M. TO 12, AND 2 TO 5.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. Explain the Stratigraphical and Palæontological relations of the Carboniferous and Permo-Carboniferous with the Triassic, in Nova Scotia and Prince Edward Island.

2. Characterise the Floras of the Carboniferous, Jurassic and Upper Cretaceous, and state their more important differences.

3. State the succession of the Cretaceous and Tertiary deposits, west of Manitoba, and describe one of the formations, with its fossils.

4. Give a sectional view of the succession of Mesozoic and Cainozoic formations on the East coast of America.

5. What are the characteristic fossils of the Leda Clay and Saxicava Sand, and their indications as to climate?

6. Tabulate the structure, fossils and relative ages of the Lias, Calcaire Grossier, London Clay, and Coralline Crag.

7. Explain the mode of formation and geological age of the Nummulitic and Orbitoidal Limestones, and of Oolite and Chalk.

8. Tabulate the geological range and zoological affinities of the following genera:—*Ammonites*, *Hippurites*, *Belemnites*, *Baculites*, *Mosasaurus* *Trigonia*, *Gryphæa*, *Iguanodon*, *Archaeopteryx*, *Ceratodus*, *Apiocrinus* *Cerithium*, *Rostellaria*, *Acrodus*, *Beryx*, *Oreodon*.

9. What generic forms and important species finally disappear in the Permian, Cretaceous and Glacial Periods?

Examination in Specimens.

10. Catalogue the Fossils contained in the specimens exhibited (Nos. 1 to 10), and refer them to their respective Geological Formations.

B. A. HONOUR, AND Bac. Sc. EXAMINATION IN MINING COURSE.

LITHOLOGY.

WEDNESDAY, MARCH 31ST:—MORNING, 9 TO 12.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., PhD.

1. What is the nature of the materials included under the term Volcanic Ejectamenta?

2. Name the rocks of which the following minerals are essential constituents:—Nepheline, Leucite, Garnet, Diallage, Saussurite.

3. Give short descriptions of the following rocks:—Diabase, Quartz-trachyte, Petrosilex, Tachylite, Obsidian, Dunite.

4. Give the characters of the Porphyrites, and state into what groups they are sometimes divided.

5. What are the principal eruptive rocks occurring on the Island of Montreal, and in the series of hills immediately to the south?

6. Name Canadian localities in which good examples of the following rocks occur:—Granite, Norite, Talc Schist, Argillite, Quartzite, Volcanic Breccia. State in each case the supposed age of the rock.

7. Axiolitic, devitrified, perlitic, fluidal. Describe these textures, and state in what rocks they may be observed.

8. Describe fully the preparation of a thin section of rock for microscopic study.

9. Name the rocks of which sections are exhibited, describing the appearances presented by the constituent minerals under the microscope. Name and describe also the hand specimens shown.

B. A. HONOURS.

PRACTICAL GEOLOGY.

MONDAY, APRIL 26TH:—AFTERNOON, 2 TO 5.

Examiners,..... { J. W. DAWSON, LL.D., F.R.S.
B. J. HARRINGTON, B.A., Ph.D.

1. What are the different modes of occurrence of Igneous Rocks? How may these be distinguished and their relative ages ascertained?

2. Explain the modes of occurrence of Mineral Veins, and classify them in accordance therewith.

3. State some of the difficulties attending the study of contorted and faulted rocks, and the methods of dealing with them.

4. Explain the manner of indicating geological observations in general maps and sections. Illustrate by an ideal map and section.

5. Explain the various ways in which mineral veins may change in character in descending into the earth, and the causes of such changes.

6. What are the best means for ascertaining the existence and effects of Faults?

7. In any rock section or exposure, what are the facts to be recorded?

8. A formation containing *Productus*, *Fenestella*, *Phillipsia*, rests unconformably upon one holding *Dekellocephalus*, *Diplograptus*, or *Paradoxides*, what may be inferred as to relative ages and intervening time?

FACULTY OF APPLIED SCIENCE.

CIVIL ENGINEERING.

SECOND YEAR MATRICULATION.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 17TH:—9 TO 12.

Examiner,..... .....G. H. CHANDLER, M.A.

1. The opposite angles of a quadrilateral inscribed in a circle are together equal to two right angles.

2. Similar triangles are to one another in the duplicate ratio of their homologous sides.

3. Draw a perpendicular to a given plane, from a given point without it.

4. Divide $\frac{x^3+y^3}{x^2-y^2}$ by $\frac{x^2-xy+y^2}{x-y}$, and $1-\frac{1}{x}$ by $\left(x-\frac{1}{x}\right) \times \left(1-\frac{1}{x}\right)^2$

5. Solve the following equations:

$$\frac{x-3}{x+2} = \tfrac{1}{2} + \frac{x-3}{2x-1},$$

$$\frac{5x}{x+4} - \frac{3x-2}{2x-3} = 2,$$

$$\left.\begin{aligned} x + y &= a \\ x^2 + y^2 &= b^2 \end{aligned}\right\}.$$

6. Prove the following relations:

$$sec\ A = \frac{1}{cos\ A},$$

$$sin\ A + sin\ B = 2\ sin\ \tfrac{1}{2}\ A + B\ cos\ \tfrac{1}{2}\ (A - B)$$

7. In a plane triangle, given $a = 831$, $b = 536$, and $C = 16^\circ\ 28'\ 40''$; find A, B, and C.

8. In order to measure the height of a house standing on the opposite side of a river, a base of 50 feet in line with a side of the house is measured, and from the extremities of this base the angles of elevation of the top of the house are found to be $25^\circ\ 10'$ and $36^\circ\ 14'$; what is the height of the house and its distance from the nearest station?

N.B. *Viva voce* examination at 3.30 p.m.

SECOND YEAR PRIZE.

MATHEMATICS.

WEDNESDAY, SEPTEMBER 17TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. All angles in the same segment of a circle are equal.

2. Describe a rectilineal figure which shall be equal to a given rectilineal figure, and similar to another.

3. What are similar surds?

Show that $3\sqrt{75}$, $\frac{2}{3}\sqrt{\frac{4}{75}}$ and $(144)^{-\frac{1}{4}}$ are similar surds.

4. Solve the simultaneous equations:

$$\left.\begin{aligned} \frac{m}{x} + \frac{n}{y} &= a \\ \frac{n}{x} + \frac{m}{y} &= b \end{aligned}\right\},$$

$$\left.\begin{aligned} x + \frac{1}{3} &= \frac{2x+y}{3} \\ \frac{x+y}{x} &= \frac{4x-y}{2} \end{aligned}\right\}.$$

5. Show how to draw a tangent plane to a sphere, so that the plane shall contain a given line.

6. The area of a parabola cut off by any chord is two-thirds of the area of the triangle formed by the chord, and the tangents to the parabola of its extremities.

7. What is the difference between Napierian and common logarithms, and how would you convert the former into the latter?

8. Prove the following:

(*a*) $\tan A = \dfrac{\sin A}{\sqrt{1-\sin^2 A}}$,

(*b*) $\sin(A+B)\sin(A-B) = \cos^2 B - \cos^2 A$,

(*c*) $\dfrac{1+\sin a}{1+\cos a} = \dfrac{1}{2}\left(1+\tan\dfrac{a}{2}\right)^2$.

9. The altitude of the sun is 36° 30′, what is the length of the shadow of a man 6 feet high?

10. From the top of a ship's mast, 86 feet high above the water line, the depression of the hull of another ship measured from the visible horizon was observed to be 14° 34′. What was the distance of the ships from one another, taking into account the dip of the horizon?

11. The radius of the inscribed circle of a triangle is r, the radii of the three escribed circles are r_1, r_2, r_3, respectively; prove that

$$\frac{1}{r} = \frac{1}{r_1} + \frac{1}{r_2} + \frac{1}{r_3}.$$

THIRD YEAR EXHIBITION.

MATHEMATICS, &c.

WEDNESDAY, SEPTEMBER 17TH:—9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. The volume of a sphere is equal to two-thirds of that of the circumscribing cylinder.

2. Solve the equations:

$$\left.\begin{aligned} a + x - \sqrt{a^2 + x^2} &= b, \\ x^3 + y^3 &= 189 \\ x^2 y + x y^2 &= 180 \end{aligned}\right\}.$$

3. From the top of a house 40 feet high, a tower 180 feet high subtends an angle of 36°; what is the horizontal distance of the tower?

4. Find the centre and radius of the circle

$$3 x^2 + 3 y^2 + x - 5 y = \tfrac{1}{2}.$$

5. The area of an ellipse is $\pi a b$, where a and b are the semi-axes major and minor respectively.

6. A weight of 8 lbs. is placed on a smooth horizontal table, and is attached by a string to a weight of 12 lbs. hanging over the table. Find the tension of the string, the velocity generated in one second and the space described from rest in two seconds.

7. Explain what is meant by the imaginary solidifying of a portion of a fluid. Apply this principle to prove that fluids press equally in all directions.

8. A body is whirled round by a string in a vertical circle. Prove that the string must be able to support at least 6 times the weight of the body.

9. A stone is projected vertically downwards with a velocity v, and in n seconds after its projection, a second stone is projected downwards with a velocity v'; find when the stones will meet.

10. A piece of ordinance, while under proof at Woolwich, burst when 50 yards from a wall 14 feet high, and a fragment of it, originally in contact with the ground, after grazing the wall fell 6 feet beyond it on the opposite side. Find how high it rose in the air.

THIRD YEAR EXHIBITION.

MECHANISM.

THURSDAY, SEPTEMBER 18TH:—9 TO 11 A.M.

Examiner,..... C. H. MCLEOD, C. E.

1. C is the centre of a circle of which A B is a diameter and P a point in its circumference; calculate the ratio of the velocity of the point P to the component of its velocity, which is paralled to A B.

2. Describe a method of converting continuous circular into right line reciprocating motion by means of segmental teeth.

(*a*.) How may the due engagement of the teeth of the wheel work of a machine constructed on this principle be secured?

3. Explain fully the construction of the teeth of bevil wheels.

4. What is the construction known as *sun and planet* wheels a substitute for? (*a*) Calculate the relative motions of the wheels. (*b*) Wherein is this arrangement imperfect as a transmitter of motion for the purpose for which it was originally intended?

5. Explain the principle of the pantograph, and show how it is applied to the copying of "parallel motion."

6. What is the use of the fusee, and how is its shape obtained?

7. What is the condition necessary as to the diameters of speed pulleys when they are connected by a crossed belt? Prove the truth of your answer.

8. Explain the principle of the double excentric as applied to Locomotive Engines.

SCOTT EXHIBITION.

Macaulay:—*History of England*, vol. 1, cap. 1.
Sir Walter Scott:—*The Lady of the Lake.*
John Milton:—*Areopagitica.*

THURSDAY, SEPTEMBER 18TH:—MORNING, 9 TO 12.30.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L.
CHAS. E. MOYSE, B.A.

1. Reproduce, as faithfully as you can, Macaulay's assertions in support of the statements:—

(*a*) "The talents and even the virtues of her [*England's*] first six French Kings were a curse to her. The follies and vices of the seventh were her salvation."

(*b*) "To this day the constitution, the doctrines and the services of the Church [*of England*] retain the visible marks of the compromise from which she sprang."

(*c*) "The tribunals afforded no protection to the subject against the civil and ecclesiastical tyranny of that [*Stuart*] period."

(*d*) "It is impossible to believe that considerations [*touching the execution of Charles I.*] so obvious, and so important, escaped the most profound politician [*Oliver Cromwell*] of that age."

(*e*) "The Protector's foreign policy at the same time extorted the ungracious approbation of those who most detested him."

2. Describe, in Scott's words when you can;

(*a*) The lodge on the isle. (*b*) The quarrel in the hall of Douglas. (*c*) The Goblin-cave. (*d*) The death of Blanche of Devan. (*e*) The combat between Fitz-James and Roderick Dhu.

What is the meaning of each of these words, *snood, pibroch, canna, correi, boune?*

Mention the site of the more important localities in *The Lady of the Lake.*

3. What remarks does Milton make concerning:

(*a*) The crime of "killing" a Good Book.

(*b*) "Whether be more the benefit or the harm that proceeds from reading widely."

(*c*) "The quality which ought to be in every licenser."

(*d*) The statement that licensing "seems an undervaluing and vilifying of the whole nation."

(*e*) The fear of promoting "Schisms and Sects" by granting liberty to the press.

What allusions are made to *Mr. Selden, Harry the* 8, *Galileo, Lord Brook, Harry the* 7?

SCOTT EXHIBITION.

APPLIED MECHANICS.

FRIDAY, SEPTEMBER 19TH:—MORNING, 9 O'CLOCK.

Examiner,.....HENRY T. BOVEY, M.A. C.E.

1. State the principal properties of wrought iron and steel, and shew in what respects the one is superior to the other as a material of construction.

2. How would you prevent slips in side-cuttings?

3. A girder of uniform section is fixed at both ends and uniformly loaded; determine the position of the points of inflexion and of the points of maximum strain, and shew that such a girder is theoretically $1\frac{1}{2}$ times as strong as the same girder merely resting on supports at the ends.

4. A beam 10 feet long, 3 inches wide, and 4 inches deep, rests on supports at its ends, and is loaded at the centre so as to produce a deflection at that point = one inch; determine the greatest strain on the fibres and also the load. ($E = 25{,}000{,}000$ lbs.)

5. At any bed-joint of a mass of masonry, if R be the total pressure, b the breadth, t the thickness and f' the max. safe pressure in lbs. on the sq. ft., prove that:—

I. $q = \frac{1}{2} - \frac{2R}{3f'bt}$, if it be assumed that the intensity of the pressure is zero at the inner edge, and increases uniformly outwards.

II. $q = \frac{1}{6}\left\{\frac{bf't}{R} - 1\right\}$, if it be assumed that the pressure at the inner edge is a min., but finite, and increases uniformly outwards (q being the max. safe ratio of the deviation of the centre of resistance from the centre of figure, to the thickness of the masonry at the given bed-joint).

6. Construct a reservoir wall of masonry, 20 feet high, with a vertical face to retain earth level with its top, the opposite face having a batter of $\frac{1}{4}$ in 1. Trace the curves of the centres of resistance:—

(1) When no water presses on the wall. (2) When it is level with the top.

(Data:—Weight of a cubic foot of masonry = 130 lbs., of earth = 120 lbs
Angle of repose of earth = 30°, $q = \frac{3}{8}$.)

7. Describe the practical method of verifying the stability of an arch, symmetrical and symmetrically loaded.

8. Prove that if the external forces which act upon a masonry arch be all parallel, the curves of "Pressure" and "Centres of Pressure" may be made to coincide; and if the intrados be a parabola, find the equation to such curve, and hence determine the limiting span of the arch.

9. A bridge over La Grande Baise is a continuous girder bridge in two equal spans. Each span is 65 feet long in the clear, with a single line of railway between two main wrought iron girders spaced 16 feet centre to centre, and resting on the abutments and a centre pier. The weight of the bridge per foot run is 224 lbs., and the proof load per foot run is 270 lbs. Calculate the resistances at the points of support for either girder:—
(1) When neither span is loaded. (2) When the first span alone is loaded.

3. When both spans are loaded. Also calculate the bending moments at the centres of the spans.

10. When a building is to be erected in a mass of earth, determine the limiting ratio of the weight of the earth displaced by the foundation to the weight of the building.

SESSIONAL EXAMINATIONS, 1880.

FIRST YEAR.

GEOMETRY—ALGEBRA.

MONDAY, APRIL 12TH:—MORNING, 9 TO 12.

Examiner,..... G. H. CHANDLER, M.A.

1. Through a fixed point within a given circle any number of chords are drawn to meet the curve. Prove that the rectangle contained by the two segments of each chord is constant.

2. In a given circle inscribe a triangle equiangular to a given triangle.

3. On a given straight line describe a rectilineal figure similar and similarly situated to a given rectilineal figure.

4. In equal circles, sectors have to one another the same ratio as the arcs on which they stand.

5. Given the base and the sum of the squares on the sides of a triangle, find the locus of the vertex.

6. Given in one plane a point and two straight lines, it is required to draw through the given point a line which shall be divided by the given lines into parts having a given ratio.

7. The base of a triangle is divided harmonically by the two sides and the bisectors of the internal and external vertical angles.

8. Find the greatest common measure of

$$x^3 - 8x + 3 \text{ and } x^6 + 3x^5 + x + 3.$$

9. If $\frac{a}{b} = \frac{c}{d} = \frac{e}{f}$ &c., prove that $\frac{a}{b} = \frac{m\,a + n\,c + p\,e + \&c.}{m\,b + n\,d + q\,f + \&c.}$

10. Solve the following equations:

(*a*) $$\frac{3-4x}{3(3-x)}+\frac{1}{2(1-x)}=1\tfrac{1}{2},$$

(*b*) $$\frac{1}{a-\sqrt{a^2-x^2}}-\frac{1}{a+\sqrt{a^2-x^2}}=\frac{a}{x^2},$$

(*c*) $$\frac{4x+7}{19}+\frac{5-x}{3+x}=\frac{4x}{9}$$

11. Find x and y from the following simultaneous equations:

(*a*) $$\frac{a}{x}+\frac{b}{y}=\frac{1}{r},\ \frac{a}{x}+\frac{c}{z}=\frac{1}{q},\ \frac{b}{y}+\frac{c}{z}=\frac{1}{p};$$

(*b*) $$x^2+xy=66\ ,\ x^2-y^2=11;$$

(*c*) $$\sqrt[3]{x}+\sqrt[3]{y}=3,\ x+y=9;$$

(*d*) $$a^{5x}.b^{3x-7}=c^{2y},\ d^y=b^{4x}.$$

12. Divide $2\sqrt{3}+3\sqrt{2}+\sqrt{30}$ by $3\sqrt{6}$, and $2\sqrt{3}+3\sqrt[3]{2}+\sqrt[4]{30}$ by $3\sqrt{2}$.

13. The fore-wheel of a carriage makes 6 revolutions more than the hind-wheel in going 120 yards; but if the circumference of each were increased by 3 feet, the fore-wheel would make only 4 revolutions more than the hind one in going the same distance. What is the circumference of each?

FIRST YEAR.

TRIGONOMETRY.

MONDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. What is meant by the circular measure of an angle? Find the circular measure of the angle 36°.

Show that the circular measure of the angle of a regular polygon of n sides is $\frac{\pi}{n}(n-2)$.

2. Trace the change in the sign of *sec.* A as A increases from 0° to 60°. Show that the secant of an angle can never be a proper fraction.

3. Given *cosec* ϑ = 2.4, find *cos* ϑ and *cot* ϑ.

4. Prove the following formulæ :—

(*a*). $Sin^2 A + cos^2 A = 1$,

(*b*). $Sin \left(\frac{\pi}{2} - \vartheta \right) = cos\ \vartheta$;

(*c*). $Sin\ (A + B) = sin\ A\ cos\ B + cos\ A\ sin\ B$,

(*d*). $Cos\ Q - cos\ P = 2\ sin \frac{P+Q}{2}\ sin \frac{P-Q}{2}$

(*e*). $Tan\ 2\ A = \frac{2\ tan\ A}{1 - tan^2 A}$,

(*f*). $\frac{1 - cos\ A}{1 + cos\ A} = tan^2 \frac{A}{2}$,

(*g*). $Tan\ A + tan\ B = \frac{sin\ (A+B)}{cos\ A\ cos\ B}$.

5. If $cos\ A = .0\dot{3}$ and $sin\ B = \frac{1}{2}$, find the value of $cos\ (A - B.)$

6. What is a logarithm ?
Given the logarithm of 2, how could you find that of $\sqrt[5]{6.25}$?

7. Given, (*a*) two sides and the included angle, (*b*) the three sides of a triangle, show how the remaining parts may be found ?

8. From the top of a mast head 80 ft. in height, what is the dip of the horizon ?

9. A castle stands on a cliff above the sea ; its height is 58 ft. ; from the top and bottom of this castle the angles of depression of a ship's hull measured from the visible horizon are found to be 5° 47′ and 5° 08′ ; calculate the ship's distance in yards.

10. St. Alban's head is 18 nautical miles from the Needles, and bears from them *W.* $\frac{3}{4}$ *N.* Sailing from the Needles in a course *S. W b W.* for three hours, St. Alban's Head is found to be due *N* What is now the distance from the Head, and the rate of sailing ?

FIRST YEAR.

FREEHAND DRAWING.

WEDNESDAY, APRIL 14TH, 1880 :—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. Copy, on a reduced scale, the drawing which is on the blackboard before you.

2. Draw a straight line design for a moulding or border.

3. Make a drawing of the table on the platform as it appears from your point of view.

SECOND YEAR.

MATERIALS.

THURSDAY, APRIL 1ST, 1880:—MORNING, 9 TO 12.

Examiners,..... { HENRY T. BOVEY, M.A., C.E.
C. H. MCLEOD, MA.E.

1. Enumerate the different ways in which a bar of any material may be strained.

What information is furnished by the rupture of a material?

ii. What species of spruce grow in Canada? State some use to which each may be advantageously applied.

3. Give the names of the principal woods used in building, state the purposes to which they are applied, and denote the usual methods of judging good from bad.

iv. How are the best building bricks made? How are the good distinguished from the bad?

Give a sketch of the usual bonds of brick-work, and reasons for the preference of one bond over another.

5. Describe, *fully*, and with all necessary sketches, the character of the following kinds of masonry: "Ashlar," "Block-in-course," "Coursed Rubble," "Common Rubble."

vi. Describe the constituents of mortar, the proportions of the materials used, the quantity of water required, and the proper means of mixing, for ordinary building purposes.

How is the strength affected by the admixture of sand with (*a*) rich lime, (*b*) cement?

7. Carefully explain the meaning of these terms:—"Coefficient of elasticity," and "Limit of elasticity," and state their relation to the strength of materials.

A prismatic body is compressed or stretched by a force in the direction of its length, write down a formula connecting the force and strain, and shew that it is homogeneous.

A round steel bar of 40 sq. inches sectional area and 30 feet long was stretched $\frac{1}{4}$ of an inch by a load of 90,000 lbs., find the coeff. of elasticity, and also find the side of a square bar of the same material which would be equally stretched under a similar force.

8. Name the different kinds of steel, and state their respective properties, and uses.

9. Mention the leading characteristics of wrought and cast iron, and the occasions when it is preferable to use the one rather than the other, with the reasons.

x. Describe some method of protecting the inside and outside of ordinary water pipes.

How is iron to be treated before a paint is applied?

xi. In what respect does the character of the resistance offered to a projectile by chilled cast iron differ from that offered by wrought iron? Which would you consider the most suitable for coast defence purposes?

12. Write out a specification for a Bessemer steel rail, carefully noting the tests to which it ought to be subjected.

xiii. Describe the specimens on the table.

SECOND YEAR.

SURVEYING.

WEDNESDAY, MARCH 31ST:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA. E.

1. The area of a tract of land is known; how would you obtain the scale to which it has been plotted, no mention being made of the scale on the plan.

2. When an "optical square" has two mirrors, the only condition necessary to its accuracy is that these mirrors make an angle of 45° with each other. Prove this.

3. It is required to run a line through a given point parallel to a given naccessible line without the aid of an angular instrument. Give the necessary construction, and prove its accuracy.

4. How may a person place himself, in range, between two points on water?

5. The diagonals of a four-sided field, A B C D, meet in E, A E = 200 links, E C = 50 links, B E = 100, E D = 105, and the area B E C .24-square chains. Find the area of A B C D.

6. How would you test for the proper centering of the needle of a compass?

7. A line A B bears N 30° E, and is 550 feet in length, B C bears N 60° W and is 750 feet in length, C D bears S 10° E, and is 1000 feet in length Find the bearing of a straight line joining A and D, and also its inclination, the point D being 100 feet below A.

8. Describe the construction of the Engineer's transit. *a* Describe the application of the adjustment to cause the line of sight to revolve in a plane.

9. Illustrate a method of recording the notes for a line of levels. Show by example how the reduction of such notes may be checked, more than two "heights of instrument" being had.

10. Referring to question 7, angles measured from a point P, which is eastward from A B, were A P B = 30°, B P Q = 90°, Q being eastward from P: at Q the angle between B and C was 20° and between B and P 40°. Find, graphically, the bearing of A P.

11. It is required to connect two lines which meet at an angle of 15° 30' by 2° curve. Calculate the length of the tangents of the curve.

SECOND YEAR.

MECHANISM.

THURSDAY, APRIL 8TH :—MORNING, 9 TO 12.

Examiner, ...C. H. McLEOD, Ma.E.

1. It is required to connect two lines of shafting, which are not parallel. to each other, by an open belt. What conditions must be observed?

2. A swashplate, having a throw of 6 in., is inclined to its axis of revolution at 60°, what is the amount of right line motion, parallel to its axis of rotation, which it imparts by turning through 45° from the position at which the reciprocating piece is at its lowest point?

3. Describe a combination of bevel wheels for obtaining the reversal of a machine.

(*a*) How would this be modified in order to secure a "quick return" motion.

4. Explain the principle of knuckle-joints, as used to transmit force.

5. A slot in the end of a bar, inclined at 30° to the axis of the bar, gives motion to a nut in a direction perpendicular to the length of the bar. The bar having motion in the direction of its length; find the velocity ratio between the rod and the nut.

6. How is the uniform transmission of motion secured by toothed wheels? Prove the truth of your answer.

7. A spur wheel of 6 in. diameter works with a rack; both rack and pinion have radial teeth. What are the curves which form the points of the teeth on the rack and on the pinion? Give the radii of the generating circles.

8. Two axes meet at an angle of 75°, and it is required to connect them by "bevel gears" so that the velocity ratio will be .8. What angles will the pitch circles of the wheels subtend at the common apex?

9. Describethe combination known as sun and planet wheels, and investigate *fully* the character of the motion transmitted by it.

10. Prove that the combination known as the pantograph may be used to copy "parallel motion."

11. Describe the Geneva stop.

12. Describe the chronometer escapement.

SECOND YEAR.

DESCRIPTIVE GEOMETRY.

WEDNESDAY, APRIL 14TH, 1880:—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA.E.

1. Draw an hypocycloidal curve, generated by a circle of 2 in. diameter on a directing circle of 6 in. diameter.

2. Construct a regular pentagon equal in area to a square of 2 in. side.

3. Project orthographically:—

(*a*) A cube of 2 in. edge, so that a diagonal of one side, which is horizontal, makes an angle of 30° with the vertical plane and the side containing it makes an angle of 60° with the horizontal plane.

(*b*) A square prism of one inch edge penetrates a right cone of 3 in. altitude, and 3 in. diameter of base. The axis of the prism meets that of the cone at right angles, bisecting it, and both are parallel to the vertical plane of projection. The prism is so placed that a diagonal of one end is vertical.

(*c*) A regular tetrahedron of 2 in. edge so placed that one face makes an angle of 45° with the horizontal, and 60° with the vertical, and one edge is in the horizontal plane of projection.

(*d*) In an hip-roof the pitches of the two adjacent portions are 30° and 45°, find the inclination of the hip-rafter.

4. Project isometrically a solid cross, the arms of which are $\frac{1}{4} \times \frac{1}{4} \times \frac{3}{4}$ and its total height $2\frac{1}{2}$.

SECOND YEAR.

MECHANICS.

APRIL 12TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. A body moves freely from rest for a time t, with a constant acceleration f. Prove that the distance passed over $= \frac{f t^2}{2}$

2. A uniform rod is placed in a smooth hemispherical cup which has the middle point of its surface fastened to a horizontal plane. One end of the rod projects over the edge of the cup. Find its length when it rests at an angle 30° to the horizon.

3. Find the resultant of two parallel forces which act in opposite directions upon a rigid body.

4. Determine the conditions of equilibrium of any number of forces acting in one plane upon different points of a rigid body.

5. Explain the distinction between kinetic and potential energy.

The inner and outer radii of the rim of a fly-wheel weighing 13,000 lbs. are 4 ft. and 4 ft. 3 in. respectively, and the wheel makes 135 revolutions per minute. Find, approximately, how much kinetic energy is stored up in the wheel.

6. Show that the quantity of available energy consumed by friction in each revolution of an axle is $2 \pi r W \sin a$ where r is the radius of the axle, W the load, and a the angle of repose.

7. Find the amount of work saved by the use of friction wheels.

8. Enunciate and prove the first of Guldinus's properties of the centre of gravity.

9. A right circular cone is filled with water and placed on a horizontal plane. Show that the pressure on the base is three times the weight of the water.

10. Find the centre of pressure of a triangle whose base is horizontal and vertex in the surface of a liquid.

11. A piece of cork weighing 1 oz. is fastened to a sinker weighing 3.5 oz., and it is found that they just sink when placed in water. The sp. gr. of the cork being 0.25, find that of the sinker.

12. The velocity of projection of a projectile is 1,000 feet per second and the range is 500 yards; find the angle of elevation, and the greatest height to which it rises above the horizontal plane.

13. A train weighing 60 tons has a velocity of 40 miles an hour when the steam is turned off. How far will it ascend an incline of 1 in 100, taking friction at 8 lbs. a ton?

SECOND AND THIRD YEARS.

CALCULUS AND ANALYTICAL GEOMETRY.

MONDAY, APRIL 19TH:—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

(1) *Second and Third Years.*

1. What is a differential co-efficient? Find that of (*a*) $\sin x$, (*b*) $\tan x$, (*c*) $y z$, where y and z are functions of x.

2. Show that the differential co-efficient

(*a*). of $\frac{x^2}{(a + x^3)^2}$ is $\frac{2x(a - 2x^3)}{(a + x^3)^3}$,

(*b*). of $(1 + x)\sqrt{1 - x}$ is $\frac{1 - 3x}{2\sqrt{1 - x}}$,

(*c*). of $\sin^3 x . \cos x$ is $\sin^2 x (3 - 4 \sin^2 x)$,

(*d*). of $e^{\sin x}$ is $e^{\sin x} . \cos x$.

3. Determine to what extent a small error in the measurement of the vertical angle of a plane triangle will affect the length of the base supposing the sides to be correctly measured.

4. Apply Maclaurin's Theorem to determine the expansion of

log $(1 + x)$ in powers of x; and hence deduce the following series for the calculation of logarithms, viz :—

$$\log y = 2\left\{\frac{y-1}{y+1} + \frac{1}{3}\left(\frac{y-1}{y+1}\right)^3 + \frac{1}{5}\left(\frac{y-1}{y+1}\right)^5 + \cdots\right\}$$

5. Find the value of

(*a*). $\int a\, x^{\frac{2}{3}}\, dx$,

(*b*). $\int \frac{d\,x}{\cos^2 x}$,

(*c*). $\int \frac{d\,x}{a^2 - x^2}$,

(*d*). $\int \frac{(x-2)\,d\,x}{\sqrt{3 - 4\,x + x^2}}$.

6. Show that $\int_0^{\frac{\pi}{2}} \sin^2 x\, dx = \frac{\pi}{4}$.

(2) *Second Year Only.*

7. Find the equation of a straight line which passes through a given point and is perpendicular to a given straight line.

8. Determine the radius and co-ordinates of the centre of the circle whose equation is $x^2 + y^2 - ax - \frac{2}{3}\,by + \frac{2}{9}\,a^2 = 0$

9. Given the base and the sum of the squares of the sides of a triangle, find the locus of the vertex.

10. Find the equation of the tangent at any point of a parabola, and hence show that the subtangent is double the abscissa.

11. The normal at any point of an ellipse $= \frac{b}{a}\sqrt{a^2 - e^2\,x^2}$.

12 The sum of the squares of any two conjugate semi-diameters of an ellipse is constant.

13. Find the equations of the tangents to the curve

$$y^2 = x^2\,(1 - x^2)$$

at the origin.

(3) *Third Year Only.*

14. The volume of the solid formed by the revolution of the curve $y = f(x)$ round the axis of x is

$$\pi \int_a^b y^2\, d\,x.$$

Prove this formula and apply it to find the volume of a prolate spheroid.

15. Given the curve $a^2 y^2 = x^3 (2a - x)$, show:

(*a*). That the curve is symmetrical with regard to the axis of x, but not symmetrical with regard to the axis of y.

(*b*). That the maximum ordinate is $\frac{3}{4} a\sqrt{3}$.

(*c*). That the volume of the solid formed by the revolution of the whole curve round the axis of x is $\frac{8}{5}\pi a^3$.

16. Find the radius of curvature at the origin of the curve $3y = 4x - 15x^2 - 3x^3$.

17. What are points of inflexion? Has the curve referred to in the 16th question any points of inflexion? If so, find their co-ordinates.

18. Given the volume of a cylinder, find its form when its surface is a minimum.

SECOND YEAR.

ENGLISH.

TUESDAY, APRIL 6TH:—MORNING, 9 TO 12.

Examiner,.....CHAS. E. MOYSE, B.A.

Write an essay, at least two pages in length, on one of the subjects named below; attend carefully to sequence of thought, clearness of expression, and punctuation.

(*a*) Rain.
(*b*) A Railway Journey.
(*c*) A Cathedral.

THIRD YEAR.

APPLIED MECHANICS.—FIRST PAPER.

TUESDAY, APRIL 6TH, 1880:—MORNING, 9 TO 1.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. Explain the phrases, "*factor of safety*," "*proof stress*," "*working load*." Mention the usual factors of safety for cast-iron, wrought iron and steel.

A prismatic bar 10 feet long stretched .012 in. under a unit stress of 2,500 lbs. per sq. in., find the coeff. of elasticity.

2. If the bar in question (1) has to transmit 1,800 foot lbs. of work, what should be its sectional area? The ultimate strength of wrought iron to be taken at 60,000 lbs. per sq. in.

3. State some of the properties of *similar girders*, and prove that the deflections of two similar girders under their *own* weights are proportional to the *squares* of any of the corresponding linear dimensions.

One of the girders of a bridge over the Rochdale Canal is 97 feet long, and is subjected to a tensile stress in the lower flange of 2,900 lbs. per sq. in. from its own weight; what is the length of a similar girder whose tensile inch-stress is 1794 lbs. per sq. in.?

4. Define the terms "*Bending Moment*" and "*Shearing Force*" at an ideal section of a structure.

A crane, to lift 3 tons, has a radius of 12 feet, and a height of 12 feet; find the stresses on the gib and tie, and also the bending moment at the foot of the column.

If the column is round and of cast-iron, find the radius at the foot, the thickness of the metal being $\frac{3}{4}$ of an inch, and the ultimate tensile stress 20,000 lbs. per sq. in.

5. A plate iron girder is to be 60 ft. long, 4 feet deep, and to carry a *uniformly* distributed load of 180 tons. Draw diagrams of the bending moments and shearing forces at points along the girder, and shew how to build up the flanges, assuming them to be 20 inches wide.

(Safe tensile stress, 8 tons per sq. in.; safe compressive stress, 4 tons per sq. in.)

If a *live* load of 2,000 lbs. per foot run pass over the girder, find its maximum shearing effect at a point distant 10 feet from one end.

6. Carefully explain what is meant by the *neutral axis* of a bent beam, and shew how to determine its position.

A girder of I section has flanges of equal area, and a web equal in area to the joint area of the flanges. It is 50 feet long, 5 feet deep, and carries a uniformly distributed load of 2 tons per foot run; determine the equation to the neutral axis, the deflections at the centre and at a point distant 10 feet from one end, and also the stress in the fibres at 4-5ths the depth of the girder. (E = 25,000,000 lbs.)

7. Explain the effect of *fixing* the end or ends of a beam.

Determine the effect of fixing *one* end of the girder in question (6).

8. A piece of red pine 13 feet long, 6 inches wide and 12 inches deep was placed on bearings 12 feet 3 inches apart, and tested by loading it in the centre. It was found to deflect 7-10ths of an inch under a load of 11,200 lbs., and it broke down under a load of 16,800 lbs.; find the "*coeff. of elasticity*" and the "*constant.*" Compare its *stiffness* with what it would be if the depth were 8 inches.

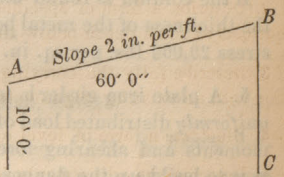
9. A round shaft is fixed at one end, and at the other is acted upon by a couple which tends to twist it; state the relation connecting the torsion and the twisting couple, and shew that it is homogeneous.

Hence deduce the practical rule:—"*The diameters of solid cylindrical beams subjected to torsional forces are, for the same material, proportional to the cube root of the torsional couple.*

The crank of a steam engine is 24 inches long, and the mean tangential force acting on it is 17,000 lbs.; if the crank shaft is 5 inches in diameter, what will be the torsion? (M = 8,000,000 lbs.)

10. Design a roof of the Polonçeau type to clear a span of 60 feet. The rafters may have to bear a *dead* load of 180 lbs. per foot run, and a *live* load of 360 lbs. per foot run. The inclination of the rafters to the horizon is 30°.

11. A B is a roof rafter resting on the two sidewalls B C, A D. What ties and struts would you introduce if, in addition to the weight of the roof, the structure is liable to a wind pressure of 20 lbs. per square foot on the face B C? Wt. on rafter may be taken at 40 lbs. per foot run.



12. Describe some method of classifying pillars.

Will a long pillar, very slightly bent, deflect gradually as the load is increased, or will it give way all at once? Why?

THIRD YEAR.

ESSAY.

SATURDAY, APRIL 10TH, 1880:—MORNING, 9 TO 1.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

Write an Essay on "Continuous Girders," noticing the following points:

(*a*). *The Theorem of Three moments, with an application to 5 equal spans uniformly loaded.*

(*b*). *The case of two equal spans of* 80 *ft., uniformly loaded with a weight of* $\frac{1}{2}$ *ton per foot run.*

(*c*). *The effect in* (*b*) *of a single concentrated load passing over the girders when at a distance of* 20 *ft. from one end.*

(*d*). *The graphical representation of the bending moments and shearing forces in* (*b*) *and* (*c*).

(*e*), *The practical advantages and disadvantages of continuous girders.*

THIRD YEAR.

SURVEYING.

WEDNESDAY, MARCH 31ST :—MORNING, 9 TO 12.

Examiner,.....C. H. MCLEOD, MA. E.

1. Describe a method of conducting a track survey on a large river.

2. Describe a form of specimen cups for obtaining specimens from soft bottoms at some depth below the surface.

3. Describe fully the carrying out of a harbor survey where no connection with an existing trignometrical survey can be had.

4. Illustrate a form of level notes for setting-out work.

5. Describe the adjustments (other than the " peg") which are applied to the Y level.

6. The angle of elevation to a mountain peak distant 25 miles is 1° 30′; find its altitude (without approximation), applying the correction due to the mean value of refraction. The datum is supposed to contain the point of observation.

7. Describe an apparatus suitable for measuring secondary lines in a large triangulation survey.

8. Show how to reduce an angle of a spherical triangle to the corresponding angle between the chords of the arcs.

9. The declination of *Polaris* is 88° 40′, calculate its azimuth, at greatest elongation, in latitude 45° 31′ North.

10. Calculate the distance and bearing between two points A and B; A is in latitude 45° 31′ N., and long 73° 39′ W.; B is in latitude 43° 39′ N and in longitude 79° 25′ West.

THIRD YEAR.

DESCRIPTIVE GEOMETRY.

WEDNESDAY, APRIL 14TH, 1880:—MORNING, 9 TO 12.

Examiner, ... C. H. MCLEOD, Ma.E.

1. Describe the polyconic method of constructing maps. (*a*) How is this modified in the equidistant-polyconic method?

2. What method of projection is Mercator's chart a modification of? (*a*) How is this chart constructed?

3. Project orthographically the shade and shadow caused by parallel rays of light falling on a solid cross which stands on a pedestal 3 ft. square and 2 ft. high; the central portion of the cross is a prism 1′ x 1′ x 7′ and its arms are 1′ x 1′ x 2′. The cross is placed with its central portion vertical and its arms inclined at 45° to the vertical plane. The light meets the vertical plane at an angle of 30° and the horizontal at 45°.

4. Prove that the perspective projection of lines which are parallel vanish in the same point.

5. Project perspectively, the height of the spectator being 6 ft. and his distance from the picture plane 12 ft:—

(*a*) A cylinder 4 ft. long and 3 ft. diameter of base when placed 3 ft. on the left, 3 ft. within the picture and with its axis horizontal and inclined to the picture plane at 30°.

(*b*) A right pyramid, 10 ft. in altitude which has a regular pentagonal base of 1.5 ft. side, placed so that its axis is vertical, 3 ft. on the left and 3 ft. within the picture; the edge of the base which is nearest the foreground being parallel to the picture plane.

(*c*) The shade and shadow cast by the objects in question, (*a*) and (*b*) by rays of light the horizontal projections of which make angles of 30° with the picture plane, and the vertical projections angles of 45° with the horizontal; the direction of the light being from the left and from behind the picture plane.

THIRD YEAR.

SPHERICAL TRIGONOMETRY AND PRACTICAL ASTRONOMY.

MONDAY, MARCH 29TH;—MORNING, 9 TO 12.

Examiner, ... G. H. CHANDLER, M.A.

1. Prove that in any spherical triangle

$$\cos \tfrac{A}{2} = \sqrt{\frac{\sin s \sin (s-a)}{\sin b \sin c}}$$

$$\sin \tfrac{a}{2} = \sqrt{\frac{-\cos S \cos (S-A)}{\sin B \sin C}}$$

2. Mention the six cases of oblique-angled spherical triangles, and apoint out the method of solution for each case.

3. Show that the parallax in altitude of a celestial body is equal to the horizontal parallax multiplied by the cosine of the altitude.

4. The star β Tauri was observed to pass the meridian of Montreal $4^h\ 5^h\ 54^m\ 37^s.49$ on the 12th of March, 1880. Find the error of the clock.

5. At a place in latitude 53° 24′ N., and longitude 25° 18′ W., the altitude of a star when east of the meridian was observed to be 42° 8′ 50″; the right ascension of the star being $15^h\ 27^m\ 58^s$, its declination 27° 15′ 12″ N., and the sidereal time at preceding mean noon at Greenwich $20^h\ 42^m\ 8^s$; find the mean time of the observation.

6. At a given place the altitude of the sun was the same at $8^h\ 4^m\ 54^s$ and $4^h\ 2^m\ 36^s$; required the error of the clock, the polar distance being increasing, the equation of equal altitudes being $12^s.4$, and the equation of time $4^m\ 16^s.7$, to be subtracted from apparent time.

7. The meridian altitude of ths sun's lower limb being 40° 22′ 15″ on the 23rd of February, 1880, at a place in longitude 65° 15′ W., and the height of the eye being 20 feet, find the latitude.

8. Explain carefully the method of determining longitude :

(*a*) By the electric telegraph.

(*b*) By lunar distances.

THIRD YEAR.

MATHEMATICAL PHYSICS.

MONDAY, APRIL 12TH :—MORNING, 9 TO 12.

Examiner,.....G. H. CHANDLER, M.A.

1. A body turns about an axis with angular velocity ϖ; prove that the quantity of kinetic energy stored up in the body is $= \frac{1}{2}\varpi^2 I$, where I is the moment of inertia of the body about the axis.

2. Find the moment of inertia :

(*a*) Of a thin circular plate about a diameter.

(*b*) Of a sphere about a diameter.

(*c*) Of a right circular cone about its axis.

3. The weight of a fly-wheel is 3360 lbs., the length of the radius of gyration = 8 feet, the number of revolutions per minute = 24; what number of strokes will this wheel give two forge hammers, each weighing 250 lbs., each hammer having a lift of 3 feet, friction being neglected?

4. A train weighing 60 tons has a velocity of 40 miles an hour when the steam is turned off. How far will it ascend an incline of 1 in 100, taking friction at 8 lbs. a ton?

5. What would be the backward pressure of a horse in going down a hill that has a fall of 15 feet in 369, with a load of 2,000 lbs., supposing the coefficient of friction to be $\frac{1}{30}$?

6. Required the work in raising 3 cwt. of coals from a pit, the depth of which is 120 feet, the circumference of the rope being 2 inches, allowing the weight of 1 foot of the rope of 1 inch in circumference to be .046 lbs.

7. Find the centre of gravity:

(*a*) Of a thin rod bent into the form of a circular arc.

(*b*) Of a thin plate in the form of a parabolic half-segment.

8. The curve $y = f(x)$ revolves about the axis of x, and generates a solid of revolution. Show that the centre of gravity of the portion of this solid included between two planes perpendicular to the axis of x, and at distances a and b respectively from the origin, is given by the formula:

$$\bar{x} = \frac{\int_a^b xy^2\,dx}{\int_a^b y^2\,dx}$$

9. Apply the formula of the last example to determine the centre of gravity of a solid hemisphere.

10. Find the equation of the catenary, viz:

$$y = \frac{a}{2}\left(e^{\frac{x}{a}} + e^{-\frac{x}{a}}\right)$$

Show that the curve is approximately a parabola when the deflection is small.

THIRD YEAR AND BAC. APP. SC.

MATERIALS.

THURSDAY, APRIL 1ST, 1880:—MORNING, 9 to 12.

Examiners,..... { HENRY T. BOVEY, M.A., C.E.
C. H. MCLEOD, Ma.E.

i. What is the connection between the structure of a wood, and its tendency to warp and split?

Why is it that the resistance to tearing in this material is so much greater than the resistance to cross breaking?

2. Name the best kinds of timber for use in mines, and discuss the circumstances affecting their durability.

iii. Describe, *briefly*, the process of manufacturing Portland cement. How is its tensile strength affected by its specific gravity?

4. What materials are employed for the "tubbing" of a shaft? Point out their relative values for the purpose.

v. Describe the constituents of mortar, the proportions of the materials used, the quantity of water required and the proper means of mixing, for ordinary building purposes.

6. State in *detail*, the composition, properties and uses of Hydraulic Cement Concrete.

Write out a specification for Portland Cement Concrete.

7. Name some of the principal stones used for building, and the main causes of their decay. What means are adopted to prevent such decay?

8. Carefully explain what is meant by the "Limit of Elasticity" of a material, and shew by an example that in many cases this limit is exceeded though the strength of the material is not impaired.

9. Name the principal impurities present in cast iron, wrought iron and steel, and state what influence they have upon the strength of these materials.

10. Contrast the qualifications of wrought iron and steel for bridge work.

xi. What are the tests for determining the quality of bricks? Why is it that in a climate like that of Canada, bricks should be carefully selected when required for engineering purposes?

12. Describe the process of manufacturing Bessemer steel.

A Under what circumstances may submarine blasting be conducted without the aid of bore-holes?

B. Describe, *briefly*, the manufacture of gun-cotton.

C. What is the composition of Dynamite ?

THIRD YEAR AND BAC. APP. SC.

Roads.

FRIDAY, APRIL 2ND, 1880 :— MORNING, 9 TO 12.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. What circumstances govern the intensity of the resistance to motion along a road, and the daily work of the motor? Explain in detail the influence of "ascents and descents."

2. Three towns lie at the corners of a triangle ; shew how to determine the best line of connection, it being assumed that the physical features of the country are equally favourable to any line.

3. Describe (*with sketches*) the character and use of sidewalks, side-gutters, and cross-drains.

4 How would you propose to carry a road across a tidal marsh?

5. What is a Macadam road? In what respect does it differ from a Tredgold (or Tresaguet) road?

Discuss the statement that—"The true foundation of a road is the natural soil, kept constantly dry ; the road serves merely as a covering whose thickness is of little importance, but it must be impermeable and homogeneous."

6. Contrast the advantages and disadvantages of Macadam and Asphalt roads.

Describe the process of mixing the asphalt, and laying it "in situ."

7. A road paved with hard setts has to withstand very heavy traffic ; give a detailed description of the foundation.

Illustrate by an example the great stress to which a sett may be subjected by a heavy concentrated load.

How is the condition of the road affected by the size and form of the
?

8. Specify for the character and size of the stones to be used in a frosty climate :—

a. In a Macadam road. *b*. In a paved road.

9. Give a sketch, with all necessary dimensions, of :—

a. A Macadam road for heavy traffic. *b*. A wooden pavement for light traffic.

Estimate the cost of each approximately.

10. Describe the instrument usually employed in adjusting the level of the cross section of a road.

11. Contrast the qualifications of "scrapers" and "brushes" for cleaning roads.

THIRD YEAR AND BAC. APP. SC.

APPLIED MECHANICS—SECOND PAPER.

THURSDAY, APRIL 8TH, 1880 :—MORNING, 9 TO 1.

Examiner,.....HENRY T. BOVEY, M.A., C. E.

1. What is meant by *equalizing* earth work ? Describe the different methods of forming embankments. How is *shrinkage* allowed for ? Compare the efficiency of *barrow* with that of *cart* transport, and shew that the distance L, which is equally economical for the two kinds, is given by the relation $D \frac{2L + a}{b\ c} = D_1 \frac{2L + a_1}{b_1\ c_1}$ where $D\ D_1$, $a\ a_1$, $b\ b_1$, $c\ c_1$, are the corresponding costs of a day's work, distances equivalent to the times lost in loading and discharging, distances traversed in a given time, and useful loads.

2. Shew how to calculate the breadth of a slope when the natural ground has a given uniform sidelong inclination.

A cutting is to be made through ground with a sidelong inclination of 5 to 1 ; the half-breadth of the base is 10 feet, and the central depths of three successive sections 100 feet apart, are 10, 15 and 20 feet ; the slopes of the cutting are 2 to 1 ; determine by the *Prismoidal* formula, the cube of the excavation between the extreme sections. Find the errors incurred by using the methods of *mean areas* and *mean heights*.

3. A pressure P produces a *uniformly varying* stress over a symmetrical surface of area S, shew that—

$$P = \frac{f S}{1 + \frac{x_0 x_1}{I} S}.$$

x_0, and x_1 being the respective deviations of the centre of pressure and the point of maximum stress from the centre of figure, and I is the moment of inertia of the section. Hence deduce the condition that the stress may be nowhere *negative*.

A wall 6 feet wide at the bottom, plumb at the rear, and with a front batter of 1 in 12 retains water level with its top. Find the limiting position of the centre of pressure at the base so that the stress at that joint may be nowhere *negative*. How high may the wall be built when subject to this condition? (a cube foot of masonry = 120 lbs.)

4. Explain what are meant by *principal* and *conjugate* stresses at a given point in a mass of earth?

If p^x p^y are the conjugate, and p_1 p_2 the principal stresses, obtain the relations $\frac{p_x + p_y}{\cos\theta} = p_1 + p_2$ and $p_x p_y = p_1 p_2$

θ being the inclination to the horizon of the ground surface.

Hence prove that the stress at any point is the resultant of the two constant stresses—

$$\frac{p_1 + p_2}{2} \text{ and } \frac{p_1 - p_2}{2}$$

5. Prove that a pair of equal and opposite *principal* stresses acting at right angles are equivalent to a pair of *shearing* stresses of equal intensity, acting at 45° to the principal stresses.

6. The surface of a mass of earth whose angle of repose is ϕ is inclined to the horizon at an angle θ. State the ratio of the conjugate stresses at any point, in terms of θ and ϕ, and discuss the cases—

(1) $\theta = \phi$. (2) $\theta = 0$. (3) $\phi = 0$.

Apply the above to shew that earth having a large angle of natural slope may exert a greater pressure against a retaining wall, than earth of a softer nature.

7. State the conditions for the stability of a joint of masonry. Design a wall 30 feet high to retain earth sloping up from its top at the angle of repose ($= 30°$). A cube foot of masonry = 120 lbs., a cube foot of earth = 120 lbs.

8. Trenches having been got out for the foundation of a public building, are generally found to be in good gravel. At certain points, however, occur pot holes filled with soft stuff, and one of these comes at the angle of the building. Describe the precaution you would take to avoid settlements.

9. A wall 3 feet thick of rectangular section is subjected to a horizontal thrust of 800 lbs. per foot run at its top. What should be the height of the wall in order that all the joints above the base may be *frictionally* stable? Coeff. of friction = unity.

How much may be removed from the front without altering the position of the *centre of pressure* at the base?

10. Distinguish between a rigid and linear arch.

Shew how to determine the thrusts at the key and haunches of an arch with parabolic intrados.

11. Distinguish between the "*curve of pressure*," and the "*curve of centres of pressure*" of an arch, and shew that they may be made to coincide.

Shew that in an arch with an intrados in the form of a *parabola or catenary*, the line of pressure is merely the parabola or catenary moved through a certain vertical distance.

12. Give some practical method of verifying the stability of an arch.

State formulæ for the thickness of an arch at the key and haunches, and apply them to the case of a semi-circular arch of 15 feet radius.

DEGREE OF BACHELOR OF APPLIED SCIENCE.

DESIGN.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

Design *one* of the following:—

(*a*). A *sixteen* panel Whipple bridge, 200 feet long and 25 feet deep.

(*b*). An *eighteen* panel bowstring girder bridge, 180 feet long and 20 feet deep.

(*c*). A roof to clear a span of 90 fet.

Write out a *specification* for the work required by the design you may select. Draw up a *table of quantities*, and estimate the *cost*.

BACHELOR OF APPLIED SCIENCE

ESSAY.

SATURDAY, APRIL 3RD, 1880:—MORNING.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

Write an Essay on "Downward-Flow Turbines," noticing the following points:—

(*a*). *The construction and mode of regulating the supply of water.*

(*b*). *The best form of vane to receive the water, and its delineation.*

(*c*). *The efficiency.*

(*d*). *The modification introduced by Jonval, and the difficulty it was designed to overcome.*

Illustrate your work by shewing how to design a turbine of 20 H. P. for a fall of 15 feet, whose efficiency shall be $\frac{2}{3}$.

BACHELOR OF APPLIED SCIENCE.

STEAM AND THE STEAM ENGINE.

TUESDAY, APRIL 13TH, 1880:—MORNING, 9 O'CLOCK.

1. Explain the terms:—*Temperature, Absolute Zero, Thermal Unit, Latent Heat, Superheated Steam, Saturated Steam.*

Required the number of Thermal Units to change one pound of water at a temperature of 40° into saturated vapour at 150°. What is the equivalent work in foot-pounds?

2. Enunciate the two *Laws of Thermodynamics.*
Illustrate the *First Law* graphically.

3. Write down the equations to an *Isothermal* and *Adiabatic Line* of a perfect gas.

If the temperature of a *perfect* gas, which is not allowed to give or receive heat, change from t_1 to t_2; shew that the work of the change is $\frac{a.p_o.v_o}{\gamma-1} \cdot (t_1-t_2)$, where $a = \frac{1}{461.2}$., p_o v_o are the pressure and and volume at the temperature 0° F., and (γ) is the ratio of the specific heat at constant pressure to the specific heat at constant volume.

5 cubic feet of air under a pressure of three atmospheres, and at a temperature of 50° F., are compressed to a volume of one cubic foot; determine the final pressure and temperature, and the work absorbed by the compression.

4. Define a Carnot's cycle, and explain in what manner it is possible to apply to all *Thermodynamic* engines the principles which are true for a cyclical process.

Shew that the *efficiency* of a steam engine may be computed from the temperatures at which steam is admitted and ejected, irrespective of the initial and final pressure of the steam.

Determine how much of the *total* heat supplied it is possible to utilize in a given case.

5. Describe the changes in the steam during its passage from the boiler anto the cylinder.

A mixture of steam and water, of volume *unity*, expands in a non-conducting cylinder, shew that:—

$$\frac{x_1 \cdot L_1}{T_1} - \frac{x \cdot L}{T} + \int_t^{t_1} \frac{dq}{T} = 0;$$

x and x_1 are the amounts of the steam, and L and L_1 the latent heats, at the temperatures t and t_1, T and T_1 are the corresponding absolute temperatures, and (q) is the heat of the water.

Example. 1 lb. of saturated steam under a pressure of 5 atmospheres expands *adiabatically* to a pressure of $\frac{1}{2}$ an atmosphere. The initial and final temperatures are 274° F. and 150° F., determine the proportion *condensed*.

6. State an approximate formula shewing the temperatures at which water will *boil* under different pressures.

Find the temperature at which water will boil under a pressure of 3 atmospheres.

7. Assuming Mariotte's law, obtain the following expression for the *mean effective* pressure on the piston of a steam cylinder:—

$$p_m = \frac{p_1}{r}\left(1 + \log_e r\right) - p_3$$

p_1 = pressure at admission, p_3 = back pressure, and r = ratio of expansion.

The cylinder of a condensing engine is 46 in. in diameter, the length of the stroke is 9 ft.; the pressure of the steam at admission is 20 lbs. per square inch, and the *cut-off* is at $\frac{1}{4}$ of the stroke; the back pressure is 2.45 lbs. per square inch; the number of revolutions per minute is $13\frac{1}{4}$. Find the work done per minute, and the quantity of water required per H. P. per hour.

$$(\log_e 4 = 1.3863)$$

8. Distinguish between *high* and *low pressure* engines.

If a high pressure engine is to be substituted for the one in Question (7), find the diameter of the cylinder: the initial pressure to be 70 lbs., the cut-off at $\frac{3}{4}$ of the stroke, the length of the stroke 6 ft., and the number of revolutions per minute 20.

9. State the characteristics and object of *steam jackets*. How are they constructed? Shew by an example their influence on the work of an engine.

10. Mention some of the precautions to be used in fixing *Indicators*.

Discuss the accompanying diagrams taken from the ends of the 16 inch cylinder of a horizontal high pressure engine having a 3 ft. stroke, and making 72 revolutions per minute. Shew that it would be advantageous to allow the exhaust valve to leak a little behind the piston as soon as the steam expands below the exhaust line. Sketch the diagram to be expected if the steam exhaust into the atmosphere, and prove that the I. H. P. in this case is nearly $3\frac{1}{2}$ times as great as before. (*Full-size diagrams are supplied.*)

11. Describe the construction of the ordinary slide valve. Explain *fully* the meaning of the terms:—*lap, lead, angle of advance.*

In an engine with an 18 inch stroke, the lead is $\frac{3}{16}$ of an inch, steam is cut off at $\frac{1}{4}$ of the stroke, and compression takes place through $\frac{1}{8}$ of the stroke; determine the *steam* and *exhaust laps*, the eccentric radius being $2\frac{1}{4}$ inches.

12. State the use and object of expansion valves.

In question (11) an expansion valve is added whose eccentric radius is $2\frac{1}{2}$ inches; how must it be set to cut off steam simultaneously with the slide valve? Why should it not cut off sooner?

13. Explain *fully* the object of the fly-wheel of an engine.

A fly-wheel whose mean radius is 10 ft. 6 in. weighs 24,060 lbs., and is built in 12 equal segments. Find the circumferential stress upon the cottars and segmental connections when the wheel revolves at the rate of 50 revolutions per minute.

How much work must be given out to cause a reduction in the velocity of the wheel of 2 ft. per second.

14. How are connecting rods made? How is the piston-rod attached to the piston and crosshead?

Describe *in detail*, the construction of one of the following:—

Piston, Stuffing-box, Equilibrium Valve.

BACHELOR OF APPLIED SCIENCE.

HYDRAULICS.

TUESDAY, APRIL 6TH, 1880:—MORNING, 9 TO 1.

Examiner,..... .HENRY T. BOVEY, M.A., C.E.

1. Enunciate and prove Bernoulli's Theorem for the motion of a fluid column without resistance.

Under what conditions is the Theorem applicable to a current of finite section?

2. Water flows through a thin-lipped small orifice; discuss the form and dimensions of the issuing jet. How is the jet affected by the shape of the orifice?

A cistern of 20 square inches superficial area contains water 10 feet deep; if a thin-lipped orifice, 2 inches in diameter, is formed at the bottom, how long will it take to empty the cistern?

3 What are the characteristics of cylindrical and conical adjutages? Determine the "co-efficient" and velocity of discharge, under a given head, through a cylindrical adjutage. What is the co-efficient used in practice?

The water in a reservoir is 60 feet deep, and discharges through a short pipe 12 ins. in diameter; determine the mechanical effect of the efflux, and the reduction of pressure in the contracted section.

4. State the laws of fluid friction, and compare them with those of solid friction.

Discuss the law:—"The friction is independent of the nature of the surface with which the fluid is in contact."

5. Water flows through a pipe of constant section A, with a uniform velocity v. Show that the loss of head due to friction, for any length (l) of the pipe is $= \frac{P}{A} \cdot \frac{f(v)}{w} l$ where P. is the wetted perimeter, (w) the specific weight of the water, and $f(v)$ a certain function of the velocity.

How may (f) v be determined by experiment?

The water in a reservoir is 100 feet deep, and discharges through an iron pipe at the bottom, 2 feet in diameter, 2,000 feet long, and having a fall of 1 in 500; the coeff. of friction is .0052; find the amount of the discharge per minute. How much of the total head is lost? How is it possible to diminish this loss?

6. Illustrate the Theorem in question (5) by considering the flow through the ordinary mains of a public water-supply.

7. A B, B C and C D form a continuous line of pipes whose length and radii are l, l_2, l_3, and r_1, r^2, r^3, respectively; at B there is a sudden enlarge-

ment, and at C a sudden contraction of section. If water flow through the system, explain the cause of the loss of head at B and C, and determine its amount.

If A B = 100 feet, B C = 50 feet, and C D = 120 feet, and if the radii are 4 ins., 5 ins. and 3 ins. respectively, required the power to force 1,000 gallons per minute through the system of pipes; draw the "Plane of Charge."

8. Two weirs discharge the same amount of water per unit of time; obtain a relation between the length of the weirs and the depth of water upon their crests.

How is the length of a weir affected by end contractions?

9. State the formula for the velocity of a stream in an open channel. Explain the effect upon the flow of the air resistance.

Water 4 feet deep flows along a symmetrical channel, 20 feet wide at the top, and 8 feet wide at the bottom. The friction against the sides varies as the square of the velocity, and is 1 lb. per square foot, for a velocity of 16 feet per second. Find the requisite slope, so that the water may flow at the rate of 2 feet per second.

10. A stream of water of 36 square inches traverse section, moves in the direction A B, and delivers 4 cubic feet per second upon a vane moving in the direction B C with a velocity of 8 feet per second. The angle between A B and B C is 30°. Find the best form to give to the vane, the velocity of the water as it leaves the vane, and the mechanical effect of the impinging jet.

11. Distinguish between the different class of water wheels, and compare their respective efficiencies.

A wheel weighs 20,000 lbs., and makes 5 revolutions per minute; its gudgeons are 4 inches diameter, and the coeff. of friction is .08. Find the loss of mechanical effect due to friction.

12. What consideration governs the construction of a bucket for an overshot water wheel?

Determine the impulsive effect of the water on entering the bucket, and explain why it is necessary to diminish this effect, and to utilize as much of the weight of the water as possible.

BACHELOR OF APPLIED SCIENCE.

APPLIED MECHANICS.—THIRD PAPER.

SATURDAY, APRIL 10TH, 1880 :—MORNING, 9 O'CLOCK.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. A beam is in equilibrium under the action of external forces; shew that at any point $(x\ y)$ of the neutral axis, $\frac{d^2y}{dx^2} + \frac{M}{E.I} = O$, (y) being small.

A *lattice* girder is 80 feet long, 5 feet deep, and carries a uniformly distributed load of 240,000 lbs; construct a *bending moment* diagram :—(a), When it *rests* on two supports, (b), When both ends are fixed.

Hence determine the relative amounts of metal required for the flanges in the two cases.

If 2,000 lbs. per foot run of the above be a *live* load, construct a *Shearing Force* Diagram, and determine the maximum Shearing Force at a point distant 10 feet from the centre.

2. In case (a) of question (1), determine the position and magnitude of the *maximum* deflection due to a load of 20,000 lbs. suspended from a point distant 20 feet from one end.

Assuming that the deflection at any point of a beam under several loads is the sum of all the deflections caused by the separate loads, deduce the deflection due to a uniformly distributed load.

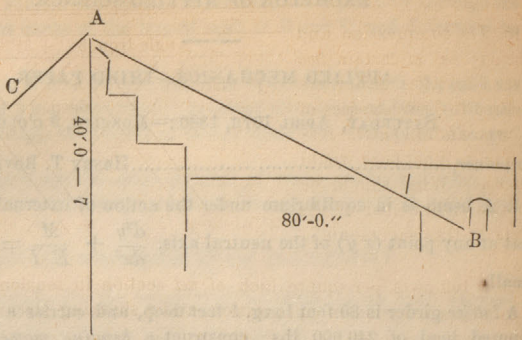
3. A wrought iron circular shaft is required to transmit a couple equal to 12,000 ft. lbs., the length of the shaft between the sections where the power is received and given off is 30 feet, and the total admissible twist is 4°; find the diameter of the shaft.

4. A bridge platform, *uniformly loaded*, is suspended from cables by *vertical* rods; shew how to find the *form* of the curve assumed by each cable, its approximate *length*, and the *tension* at any point.

How may the bridge be *stiffened* so as to counteract the influence of a *passing* load?

A bridge is suspended by *vertical* rods from 4 iron wire cables (two on each side) which pass over piers 100 feet high, 180 feet apart, and have their ends anchored at points distant 80 feet from the corresponding pier, and 40 feet below its summit; the deflection of the cables is 18 feet; the *dead* and *live* loads are 1,050 lbs. and 2,450 lbs. per foot run respectively. Find the tension in a cable at the top of a pier.

5. Determine the length and proper section of the cables in question (4) The strength of a wire = 1,640 lbs., and its diameter = .148 inch.



A C is the *cable*, A B the *back stay*; required (1) the *compressive* and *tipping* force at A, and the proper section of the pier at this point, (2) the tendency to destroy the anchorage by a vertical or a horizontal pull, and the mass of masonry necessary to resist this tendency.

(All the masonry to have a safe crushing strength of 800 lbs. per square inches.)

6. State the *mechanical* properties of the *common catenary*. Shew how to derive the *transformed catenary*, and explain its use.

The span of an arch is 50 ft., its rise 7 ft.; the height of the masonry over the crown is 2 ft. ($= y_o$.); $w = 112$ lbs. per cube foot.

Determine the transformed catenary, and find the *amount* and *direction* of the thrust at the abutments.

7. Prove the following statements:—

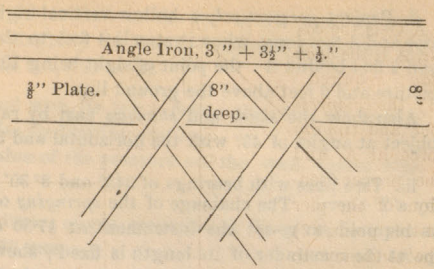
1°. *The thrusts in an elliptic rib are proportional to the axes to which they are parallel.*

2°. *The intensities of a pair of conjugate thrusts are proportional to the squares of the conjugate diameters to which they are respectively parallel.*

8. What are the characteristics of the *Hydrostatic* arch? How is the *Geostatic* arch derived from it? Shew how to determine the position of the line of pressures in the former, and give a geometrical representation of the action of the forces on one side.

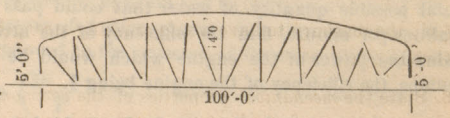
9. Sketch the centre lines of a roof to clear a span of 80 ft., and find by a *diagram* or otherwise, the stresses in the different members, taking into account the action of the wind.

10. The compression and tension bars in certain *two* bays of a lattice girder are required to bear stresses of 90 cwts. and 130 cwts. respectively. What bars would you use? What should be the size and number of the rivets at theattachments?



Allow 100 cwts. per square inch of *net* section in tension, 65 cwts. per sq. in. of *gross* section in compression, and a shearing stress on the rivets of 100 cwts. per sq. in.

11. Find the stresses in the diagonals of the annexed Bow-string girder due to a passing load of 2,000 lbs. per foot run.



If the permanent load is 1,500 lbs. per foot run, shew how to build up the flanges, and compare *approximately*, the amount of metal in them with what would be required if the flanges were horizontal.

12. Enunciate the *Theorem of Three Moments*.

The Sursuttee Bridge consists of 3 equal spans, each 88 ft., 10 ins. long and 6 ft., 9 ins. deep. Estimate the *reactions* at the piers, and the position of the *points of inflexion* under a uniformly distributed load of 4,000 lbs. per foot run, (*a*) when the *two side spans* only are loaded, (*b*) when the *centre* span only is loaded. Assume *permanent* load to be one ton per foot run.

BACHELOR OF APPLIED SCIENCE.

PROBLEMS.

THURSDAY, APRIL 15TH, 1880:—MORNING, 9 O'CLOCK.

Examiners,..... { HENRY T. BOVEY, M.A., C.E.
B. J. HARRINGTON, B.A., PH.D.
C. H. MCLEOD, M.E.

1. At 9 o'clock p.m. *mean time*, on January 20th, 1879, α Orionis, in longitude 5 hours west, was observed to have an apparent altitude of 51° 30'; find the latitude of the place of observation, using the mean corrections for refraction.

ii. Project *perspectively* a hollow vertical right cylinder, 2 feet in diameter and 4 feet long, when it stands 4 feet to the left of the picture plane and 2 feet behind it: the point of sight being 10 feet from the centre of the picture and 6 feet above the ground line.

Also shew the *shade* and *shadows* cast by rays of light falling on this object at angles of 45° with the horizontal and 30° with the picture plane.

iii. Two lines with bearings of 345° and 8° 30′ respectively, are connected by a 2° curve. The chainage of the *springing* of the curve is 44·30, and it is required to re-set the instrument at 47·50 on the curve, from which point the remainder of its length is fixed; shew the necessary field-notes, keeping continuous bearings, and calculate the length of the tangent lines.

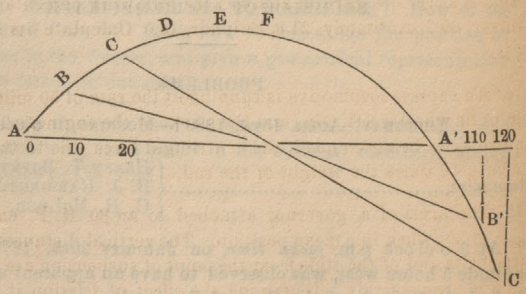
4. Two chain pumps, working at the rate of 591 feet per minute, raised 589,087 gallons of water to a height of 13 feet 10 inches in 3 hours: the total possible quantity of water that could pass the casings was 3,856 gallons per minute, find the efficiency of the arrangement. Also determine the power of the engine which would be necessary to drive the pumps, the efficiency of the engine being $\frac{3}{4}$.

5. A piece of pitch pine 13 ft. long, 14 ins. wide, and 15 ins. deep, was placed on bearings 10 ft. 9 ins. apart, and tested by loading it in the centre. It deflected .02″, .22″ .36″, .49″, .72″, and 1.14″ under the respective loads of 10, 20, 30, 40, 50, 60 tons, and broke down under a load of 60.25 tons. Find the *constant* for the material, and also its *mean elasticity*.

vi. The pitches of a hip-roof are 30° and 45°, find, *graphically*, the inclination of the hip-rafter.

7. The flange of a girder is to consist of a pair of angle irons, and a plate extending over the middle portion of the girder. Find the length of the plate and the relative section areas of the plate and angle irons which will secure the greatest economy of the material.

8. If A B C D E F, &c., be the curve of bending moments of a girder of 100 feet span for a *moving load* only, arbitrarily distributed; shew that the vertical ordinates from the line BB^1 will give the bending moments along the girder (the distance along the girder being measured horizontally from



B) when the loads have moved 10 feet to the left in the same relative order and distance; and that similarly the line CC^1 may be used when the loads have rolled 20 feet to the left, and so on.

9. A wall retains earth level with its top: define the *plane of rupture* find *geometrically, or otherwise*, its limiting postion.

Shew that the resulting value of the pressure on the wall agrees with that given by Rankine.

x. Reduce the following volumes of gas, measured at the given temperature and pressure, to 0° and 760 mm.;—

1. 540 c. c. H = 720 mm. t = 25°
2. 310 c. c. H = 680 mm. t = 10°
3. 925 c. c. H = 800 mm. t = −3°

11. Air is taken at the atmospheric pressure and at the temperature of 60°, and is compressed to a pressure of 4 atmospheres; it is then cooled to the temperature of 60° and expanded to the pressure of the atmosphere again; find the work of expansion $\left(\frac{p.v}{T} = 53.15. \text{ and } p.v^{1.41} = \textit{constant.}\right)$

12. A unit volume of a mixture of steam and water is contained in a conducting cylinder; shew that at any moment it satisfies the relation

$$\frac{L}{T}x + \int_o^t \frac{dq}{T} = a \textit{ constant.}$$

(x being the proportion of steam, L the latent heat, T the absolute temperature corresponding to t and q the heat of the water.)

Hence, if $L = a + b\ T$ & $q = t$; show that there will be condensation, a neutral state, or evaporation according as

$$x > , =, \text{ or } < \frac{T}{a}$$

xiii. A silver ore gave on analysis the following percentage composition —Silver, 60·2, Antimony, 21.8, Sulphur, 18.0 Calculate its formula ($Sb.$= 120).

14. An express locomotive is running at the rate of 50 miles an hour; the diar. of its wheel is 6 ft. 6 in., and the stroke of the engine is 2 ft.; shew that the two axles being coupled, the centrifugal force due to the coupling rod is nearly 16 times the weight of the rod.

15. The arms of a governor attached to an 80 H. P. engine, make an angle of 30° when in a mean position. The vertical distances of the centres of the balls and of the slide from the point of suspension are 2 ft $1\frac{1}{2}$ in. and 2 ft. 8 in. respectively. Determine the effect of friction if the rise of the balls causes a relative increase of velocity to the extent of .82 per cent.

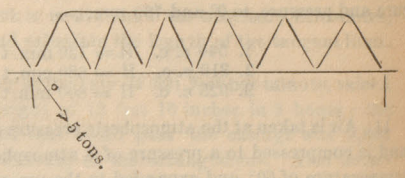
Also find the number of revolutions per minute.

16. Two streams of water, the sectional areas of which are a and b, and the velocities u and v combine. Find the velocity of the resulting stream, and the ratio of the energies before and after combination.

17. A Fourneyron 50 H. P. turbine passes 25 cube feet of water per second under a head of 47 feet; determine its efficiency.

18. Find the power required to pump water into a service reservoir at the rate of 10,000 gallons per minute, through a pipe 2 feet in diameter and 60 feet high. How much of the mechanical effect is consumed by friction?

19. The annexed Warren girder clears a span of 75 feet, and carries a uniformly distributed load of 1,000 lbs. per foot run; a live load of 2,000 lbs. per foot run passes over the girder; find the diagonal and flange stresses. (The triangulation is equilateral).



If a load of 5 tons strike the girder as in Fig., what will be the effect upon the different members?

20. A continuous girder consists of two equal spans of 80 feet; a single load of 10 tons passes over it. Find the bending moment on the centre support when the load is 20 feet distant from the end.

21. Prove that a girder under a given load has *approximately* the most economical depth, when the sectional area of the web is equal to that of the flanges together.

Apply this to find the proper depth for a girder of 40 feet span, having in the centre a breaking moment of 100 ft. tons (2,240 lbs).; the web is $\frac{3}{8}$ of an inch thick, and the compression flange is limited to a stress of 4 tons per square inch.

xxii. For what substances do the following formulæ stand.

$Ba\,SO_4$, $Na\,NO_3$, $Fe_3\,O_4$, $Hg\,Cl_2$, $Mg\,SO_4 + 7H_2\,O$, $H_3\,Po^4$:—

EXAMINATION FOR LORNE MEDAL (*Graduating Class*).

MATERIALS.

MONDAY, APRIL 19TH, 1880:—MORNING, 9 TO 11.

Examiners,..... { HENRY T. BOVEY, M.A., C.E. / C. H. MCLEOD, Ma.E.

i. Describe the Hoffman annular kiln, and explain how it is used.

2. To what is boiler incrustation due? What means are taken to prevent it?

iii. Define the term *explosion*. Upon what does the *effect* of the explosion depend? What is *detonation?* How is *wet gun-cotton* detonated?

4. Enumerate the tests you would apply to—

1.—Bricks, 2.—Earthenware and Stoneware, 3.—Cement, 4.—Wrought Iron Plates.

How would you determine whether there is too much clay in a given specimen of Portland Cement, or whether it is over-burned or overchalked?

v. How would you distinguish beech timber? Where may it be used advantageously, and why? What is its chief defect?

6. Describe the manufacture of a steel rail.

7. Write out a short specification for the masonry of a Dock wall.

LORNE MEDAL.

MATHEMATICAL PHYSICS.

MONDAY, APRIL 19TH.

Examiner,.....G. H. CHANDLER, M.A.

1. Find the co-ordinates of the centre of a system of parallel forces acting at different points of a rigid body.

2. The curve $y = f(x)$, revolves round the axis of x, and generates a solid of revolution. Prove that the abscissa of the centre of gravity of the portion of the solid included between parallel planes at distances a and b respectively from the origin is

$$\frac{\int_a^b xy^2dx}{\int_a^b y^2dx}.$$

Find the centre of gravity of a segment of a paraboloid of revolution commencing at the vertex, and having h for height.

3. Find the moment of inertia

(a) Of a thin circular plate about a diameter.

(b) Of a sphere about a diameter.

4. A body rotates about a smooth axis. Show that the amount of work done upon the body while its angular velocity increases from Ω to ω is

$$\tfrac{1}{2} I (\omega^2 - \Omega^2) \quad ,$$

where I is the moment of inertia of the body about the axis.

The radius of the earth being R miles, the average specific gravity S, the length of a sidereal day 86164 seconds, find how much energy the earth possesses on account of its rotation on its axis.

5. A string 2 feet long is fastened to two tacks in the same horizontal line, and 18 inches apart, and at a point 6 inches from one extremity a weight of 10 lbs. is fixed; find the tensions of the two parts of the string, and the portions of the weight supported by each tack.

6. Find the distance between the threads of a screw which is worked by an arm whose length is l, when the power applied at its extremity is an nth part of the pressure on the screw.

7. What is the length which a fuse must cut in order that it may burst a shell when it strikes the ground at a range of 1200 yards upon a horizontal plane, if the gun be fired at an elevation of 4°; the fuse burning at the rate of a fifth of an inch per second?

LORNE MEDAL.

HYDRAULICS.

THURSDAY, APRIL 22ND, 1880:—MORNING, 9 TO 12.

Examiner,..... .....HENRY T. BOVEY, M.A., C.E.

1. The water in a dock has to be held back by a coffer dam, 40 feet high, whose outside face is vertical. It is determined to strengthen the dam by a series of tiers of struts, 12 feet apart, the number in each tier being 4; find the proper points on the face of the dam from which the respective struts should spring, in order that an equal amount of the total pressure should be transmitted through each.

2. Assuming that each particle of water, as it falls over a wier, describes a parabola, determine the discharge for a given length of the wier. How would your result agree with practice?

What is the effect of a *vacuum* under the crest?

3. What are the most efficient dimensions of a *divergent adjutage*?

A divergent adjutage is so constructed as to avoid all contraction at en-

trance and loss of head at emergence, determine an expression for the discharge, and shew that its maximum theoretic value is

$$A_1 \sqrt{2g\,(h + \frac{p}{\omega})}$$

where A_1 is the area of the smaller opening, h the head above the adjutage axis, p_0 the atmospheric pressure, and w the weight of a unit of volume of the fluid.

hIf A be the area of the larger opening, what will be the sult if $\frac{A}{A_1}$ is much $>$ than *unity*?

4. Two contiguous reservoirs of equal depth are connected by six cast iron pipes, 4 feet in diameter, and 50 feet long, laid along the bottom. The depth of water in the larger of the two is 60 feet, and is kept sensibly constant. If at any time the depth of water in the smaller reservoir is 40 feet, and if all the pipes be open, how long (*neglecting friction*) will it take to rise to the 60 feet level?

Superficial area of the smaller reservoir = 20,000 square feet. What extra time is consumed by friction if $f = .0064$?

5. A, B, C, are three reservoirs whose water levels above datum are sensibly constant, and are h_1, h_2, h_3 respectively ($h_1 > h_2 > h_3$.) A pipe leads from A, and at a point D, whose height above datum is z, it divides into two branches, one to B and one to C. Write down the equations determining the distribution of the flow, and discuss the hypothesis of z being $>$ or $>$ h_2, pointing out the manner of choosing the true hypothesis.

Hence if Q_1, Q_2, Q_3, v_1, v_2, v_3 be the respective discharges and velocities, and if it be also assumed that the cost of the pipes is to be a minimum, (*i. e.*, if $l_1 r_1 + l_2 r_2 + l_3 r_3 =$ a minimum), prove that:—

$$\frac{Q_1}{v_1^3} = \frac{Q_2}{v_2^3} + \frac{Q_3}{v_3^3}$$

6 What is meant by the *Hydraulic mean depth* of a channel? How does it affect the volocity of flow?

Find the H. M. D. of a channel whose cross section is a regular trapezoid, the sides being inclined at an angle of 30° to the vertical.

If the sectional area of the stream is fixed, find the proper ratio of the sides to give the maximum discharge.

7. Shew how to determine the efficiency of *Breast Wheels*, and mention the practical limitations.

Design a Race for a wheel of this class.

8. Water is pumped into a tank through a vertical pipe 100 feet long, at the rate of 100 gallons per minute. A cistern 50 feet below the tank is

supplied with water at the rate of 20 gallons per minute through a pipe leading from the *tank*. Would any saving of power be effected by drawing off the required supply by means of a horizontal pipe leading directly from the vertical pipe? Why?

LORNE MEDAL.

STEAM AND THE STEAM ENGINE.

THURSDAY, APRIL 23RD :—MORNING, 9 TO 12

Examiner, ... Henry T. BOVEY, M.A., C.E.

1. Prove the relation $p = k\rho(1 + a\,t.)$

What are the dimensions of k?

2. If L be the latent heat of a unit of mass of steam at specific vol. V., pressure p, and absolute temperature t, and if v be the specific volume or water at the same temperature and pressure, prove that $\frac{J\,L}{t} = (V - v.)\frac{dp}{dt}$ (J being Joule's equivalent).

Hence show that the useful work done by a unit of mass of steam in one stroke of an ordinary condensing engine, furnished with a steam jacket, between leaving and re-entering the boiler, will be $J\int_{t_1}^{t_2}\frac{L}{t}\,dt$ where t_1 and t_2 are the temperatures of the condenser and boiler.

3. What are the different states in which water may be found in a cylinder?

What precautions are to be adopted to avoid the danger arising from too large an increase of water?

4. In a steam jacketed engine, p_1 is the initial pressure of the steam, r, the ratio of expansion, p_3 the back pressure, and p_m the mean forward pressure, shew that—

$$p - p_3 = p\left(\frac{17}{r} - \frac{16}{r\frac{7}{6}}\right) - p_3$$

If $p = 60.4$ lbs., $p_3 = 3$ lbs., and $r = 6$, find the mean force transmitted, through the piston rod, the length of the stroke being 4 ft., and the diameter of the cylinder 2 ft. (log 6 = .77).

If the connecting rod be assumed to be very long, shew by a diagrams the turning effort or couple exerted by the crank at all points of the stroke.

Find the diameter of the piston rod (factor of safety =10).

5. How and why do you correct the reading of an indicator for low temperature?

6. On what principle is the utility of a *condenser* for a steam engine founded? Give a sketch of a modern type of condenser, and describe its mode of action.

What are the main characteristics of *surface condensers?*

In a certain case the weight of condensed water was 12 cubic feet per hour, and required to be raised by a special pump to the height of 80 feet; the efficiency of the air pump and the additional pump was 4-9, find the equivalent horse power.

7. Classify the systems of *variable expansion* which are obtained by means of an ordinary valve and circular eccentric, and describe *in detail* the action of any *one* type.

8. When water is evaporated under pressure, what amount of heat is spent in external work?

Shew that the greatest amount of work that can be obtained per lb. of steam, from a non-expansive engine, at a pressure of 60.4 lbs. per square inch is 60816.416 foot lbs., the volume of 1 lb. of steam being 6.992.

9. Describe *in detail* the construction of, (1) *a valve eccentric* (2), *an oil cup*.

DEGREE OF MASTER OF ENGINEERING.

HYDRAULICS.

FRIDAY, DECEMBER 12TH, 1879:—MORNING, 9 O'CLOCK.

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. Find the time required to empty a dock whose depth is 31 ft. 6 ins., and whose horizontal sectional area is 550,000 square feet, by means of two 7 feet circular culverts, each 50 feet long.

2. State Bernoulli's Theorem for the motion of water within a perfectly smooth pipe. Under what conditions may this Theorem be applied to the case of a current of finite section?

3. Explain the "loss of head" due to a sudden enlargement in a pipe, and determine its amount.

If a pipe whose diameter is 8 ins. suddenly enlarges to one whose diameter is 12 ins., find the power required to force 1,000 gallons per minute through the enlargement.

4. It is required to supply a service reservoir with water at the rate of 11,000 gallons per minute, and it has to be pumped up through a vertical pipe 30 feet high. Find the minimum diameter of the pipe consistent with economy.

Data: d = diameter of pipe in feet; cost of pipe per foot length = \$d; cost of pumping = 1 cent per H. P. per hour, to which is to be added 10 p. c. for repairs and maintenance; original cost of engine = \$200 per H. P.

5. Briefly describe Darcy's experiments on the resistance of water in pipes, and shew in what respects they have modified the previously accepted laws and formulæ of flow.

6. Deduce a general formula for the flow of water in an open channel of uniform section, and state any reason to shew that the present accepted theory is imperfect.

How will the depth of the channel be affected at points where there is a variation in the inclination of the river-bed?

7. Calculate the flow per minute across a given section of a rectangular canal 20 feet deep, 45 feet wide, the slope of the bed being 22 ins. per mile and the coeff. of friction per square foot = .008.

8. Explain why it is that in the windings of rivers in alluvial plains the outer shores are more eroded than the inner, while the currents along the inner banks flow more rapidly than those along the outer banks.

9. Describe Poncelet's undershot water wheel, and state its advantages over a wheel with radial floats.

Determine the angle which the tangent to the floats at the outer extremity makes with the radii of the wheel.

10. Given the outer and inner radii of a turbine, and the initial velocity of whirl; find an expression for the efficiency (neglecting friction).

11. A vortex turbine passes 12 cubic feet of water per minute under a head of 35 feet; the diameter of its wheel is 2 feet, and its breadth 6 inches. Find the power of the turbine and the inclination of the guides (neglecting friction).

12. Construct an outward flow turbi of 30 H. P. for a fall of 5 feet whose efficiency shall be $\frac{3}{5}$

MASTER OF ENGINEERING.

WATER SUPPLY.

MONDAY, DECEMBER 15TH, 1879:—MORNING, 9 O'CLOCK

Examiner,.....HENRY T. BOVEY, M.A., C.E.

1. What conditions influence the selection of a source of water for the supply of a city or town? Determine the capacity of a circular conduit to supply a town with water at the rate of 10,000 gallons per minute, and estimate the number of people for whom such supply would suffice.

2. State the characteristics of the "intermittent" and "constant" systems of water supply.

3. State the different kinds of reservoir, and explain their respective uses. How is the capacity of a storage reservoir determined?

4. Describe in detail the construction of an embankment for a storage reservoir, from base to summit, with a sketch of its transverse section, and remarks as to the most suitable material for its core, as well as the means adopted to protect the surface-soil from frost. If the excavation for the foundation expose a spring, how would you deal with it?

Shew by diagram the strength of the embankment.

5. Write out a specification for the laying of the discharge pipes through embankment in question (4), and also for the foundation of the gate-chambers.

6. Give a statement of the "sand filter" theory. Sketch a vertical section of a filter bed which must pass a given quantity of water. Describe the cleaning process and the inlet arrangements for preventing the disturbance of the bed after having been cleaned.

How would you deal with the waters of Montreal?

7. In a given length (l) of a circular pipe, whose inner radius is (r) and thickness (e), a column of water flowing with a velocity (v) is suddenly checked by the shutting off of cocks, &c.; shew that—

$$gh = \frac{\mathrm{E}\ e.\ \lambda^2}{r}\left\{1 + \tfrac{1}{2}\cdot\frac{e}{r}\left(1 + \frac{\mathrm{E}}{\mathrm{E}}\right) + \frac{e^2}{r^2}\right\}$$

h = head due to the velocity v, E = coeff. of elasticity, E_1 = coeff. of compressibility of water, λ = extension of pipe circumference due to E.

8. What causes accumulation in cast iron water pipes? How may it be removed? How prevented?

9. Classify the different kinds of water-meter. Describe any two of the

following:—waste-water meter, stop-valve, water pressure regulator, stand-pipe.

10. A weir 400 feet long, with a 9 inch depth of water on it, discharges through a lower weir 500 feet long; find the depth of water on the latter.

MASTER OF ENGINEERING.

PRACTICAL HYDRAULICS.

TIME, TWO DAYS.

Examiners,..... { JOHN KENNEDY, M. INST., C.E., Chief Engr. Montreal Harbour Wks.
HENRY T. BOVEY, M.A.,M. INST. M.E., ASS. M. INST. C.E.

It is proposed to construct water works for a city of 60,000 inhabitants under the following conditions:—

1. The present maximum consumption for ordinary purposes to be taken at 5,000,000 imperial gallons in 24 hours, and for fire purposes 1,800 gallons per minute additional, with a probability of the growth of the city requiring increased quantities within 10 years.

2. The source of supply is a lake, 7 miles distant from the centre of the city, the water being sufficiently pure in its natural state, except when disturbed by unusual storms or during freshets of short duration.

3. The city is on sloping ground, the part containing warehouses and manufactories being at an elevation of 50 to 100 feet above the source of supply, while the upper part, chiefly occupied by residences, rises to 200 feet above the source.

4. Sites for a reservoir at any desired elevation can be reached by a branch main ¾ths of a mile in length, either near the pumping station, midway between that and the city, or beyond the centre of the city. The subsoil in each case is impervious boulder clay, covered with 6 feet of sand and gravel, and the ground slopes about 1 in 10. Building stone and material for puddle may be obtained.

5. A suitable site can also be had for a subsiding basin at the pumping station.

6. The climate is similar to that of Montreal.

7. The works to be designed with as much regard to economy, both in first cost and maintenance as is compatible with efficiency and reliability.

Required:—

A general description of the proposed scheme of water works, with fuller treatment of the following points:—

(*a*). Whether there should be a reservoir or not, with a brief discussion of the question.

(*b*). If a reservoir be adopted, which site is recommended, and why?

(*c*). The capacity and elevation of such reservoir, with the principal reasons in each case.

(*d*). Capacity of the subsiding basin, if one be adopted.

(*e*). Whether the pumping main and the reservoir branch (if there be one) should be single or double, and the reasons therefore.

(*f*). The diameter and thickness of pumping main proposed, and the conditions which determine the former.

(*g*). The kind of pumping apparatus proposed, its capacity and required duty, and whether single or in duplicate, with the reasons in each case.

(*h*). The chief features of the proposed arrangement of distribution pipes, giving the sizes, the depths at which they should be laid, and the frequency of the connections, stop-valves and hydrants.

(*i*). If a reservoir be adopted, give a sketch to scale, and a brief description of the mode of construction.

(*j*). Give a sketch of the proposed arrangement of pipes, overflow and wells, if any, at the reservoir.

MINING ENGINEERING.

PRACTICAL CHEMISTRY.

(INTRODUCTORY COURSE FOR STUDENTS OF THE SECOND YEAR IN MINING AND PRACTICAL CHEMISTRY.)

APRIL 10TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Give the general characters of the groups into which the metals are divided for purposes of analysis, and name the metals belonging to each group.

2. How may Sodium be detected in presence of Potassium, and Potassium in presence of Ammonium?

3. Describe the detection of Magnesium in presence of Calcium, Barium and Strontium. How would you distinguish between salts of the three last metals?

4. A solution contains Arsenic, Silver, Zinc and Aluminium. How would you recognize the presence of these metals?

5. By what reagents is Chromic Acid most readily reduced to Chromium Sesquioxide?

6. What is the best method for the detection of Cobalt in presence of Nickel?

7. By what chemical tests would you distinguish between Crown (lime-soda) and Flint (potash-lead) glass?

8. A sample of White-lead is adulterated with Barium Sulphate. How may the presence of the latter substance be confirmed?

9. Describe the separation of Tartaric, Citric and Malic Acids when in solution.

10. How may Bromine be detected in presence of Iodine and Chlorine?

Examination in practical work in the laboratory, afternoon, 2 to 5.

BACHELOR OF APPLIED SCIENCE.

DESIGN, SPECIFICATION AND ESTIMATE.

Examiner,..... .....HENRY T. BOVEY, M.A., C.E.

1. Design a Percussion Table for the concentration of ores, and give the details of the arrangements for feeding, and for varying the inclination of the table.

Write out a *specification* for the work, draw up a *table of quantities*, and estimate the *cost*.

BACHELOR OF APPLIED SCIENCE.

ESSAY.

SATURDAY, APRIL 3RD, 1880 :— MORNING, 9 TO 1.

Examiner,.....B. J. HARRINGTON, B.A., Ph. D.

Write an essay on Stamp Batteries, noticing especially the following points :—

(*a*). *The foundation.*

(*b*). *The dimensions and weight of the stamps, the height of fall, and the number of blows per minute.*

(*c*). *The appliances for raising the stamps.*

FOURTH YEAR.

ASSAYING.

SATURDAY, APRIL 17TH :—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. How would you determine the iron in a specimen of titanic iron ore? How the titanium dioxide?

2. Describe any two methods for the assay of copper ores containing arsenic, lead and zinc.

3. How would you determine the amount of phosphoric acid, (1) in a specimen of apatite, and (2) in a specimen of magnetic iron ore?

4. Describe fully the operations and the theory of the scorification assay for ores of silver.

5. What do you regard as the best method for the valuation of manganese ores? Describe it.

6. A specimen of iron pyrites is known to contain gold, silver and nickel. How would you ascertain the quantities of these metals?

7. What are the uses of the following substances in assaying:—Nitre, Black Flux, Potassium Ferrocyanide, Ammonium Carbonate, Sodium Sulphide, Metallic Iron.

8. How would you ascertain the value of the ores exhibited?

Examination in the Laboratory, afternoon, 2 to 5.

FOURTH YEAR.

METALLURGY.

FRIDAY, APRIL 23RD:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., PH. D.

1. Give examples of the influence of temperature, and also of impurities, upon the malleability and ductility of metals.

2. Explain the terms Regulus, Matte, Speise, Magistral, Liquation.

3. Describe the Hunt and Douglas process for the extraction of Copper from its ores. Illustrate by chemical equations, and point out the special advantages claimed for the process.

4. Give an outline of the Welsh process for smelting Copper ores. What are the conditions necessary for the successful carrying out of such a process?

5. Give the chemical and physical characters of Silver. Classify the processes employed for the extraction of the metal from its ores.

6. What are the principal chemical reactions which take place in the treatment of Silver ores by barrel amalgamation? What loss of Silver and Mercury is usually incurred, and to what is the loss of the latter substance due?

7. What materials are used as fluxes in smelting Iron ores in the blast furnace? Between what limits does the composition of the slags usually range? Has the degree of fusibility of the slag any influence upon the character of the Iron produced.

8. Describe the Belgian process for the extraction of Zinc from its ores. What are the most frequent impurities in the Spelter of commerce?

METEOROLOGY.

SATURDAY, MARCH 13TH:—MORNING, 9 TO 11.

Examiner,.....C. H. MCLEOD.

1. Describe the construction of the following instruments:—

(*a*) A self-registering thermometer for maximum temperatures.

(*b*) An aneroid barometer.

(*c*) A wind vane suitable for electric attachment and its recording apparatus.

2. Define "relative humidity," "overcast," "corona," "halo."

3. Classify and describe (*a*) auroras, (*b*) clouds.

4. Describe fully the operation of filling a barometer tube.

5 The graduation marks on a thermometer tube are not always equidistant. Why is this, and how are the positions of the marks obtained?

6. What considerations would guide you in selecting a site for (*a*) a rain-gauge, (*b*) thermometers.

7. The temperature of the air observed at 7 a.m. was 12.0, at 2 p.m. 17.0, and at 9 p.m. 11.5. Find the mean temperature for the day.

8. How is vapour sustained in the air? How may its weight be attained at any time?

9. How is dew formed? What circumstances favour its deposition? (*a*) If on a night when dew was being formed two similar plates of glass and polished metal were placed on the ground, which would collect the most dew? Why so?

FACULTY OF LAW.

FIRST YEAR.

ROMAN LAW.

Examiner,.....N. W. TRENHOLME, M.A.

1. Give some account of the Corpus Juris Civilis and of the different works comprising it.

2. What are the principal sources from which we derive our knowledge of the History of Roman Law? By what means are we enabled to know

anything of Roman Law and institutions before the time of the XII Tables?

3. Give a short account of the form of the Roman Constitution at different periods in Roman History, pointing out the nature of the changes it underwent.

4. Into what periods does Maine divide the growth and history of law, and indicate the character of each?

5. What are the great agencies in the amelioration of law, and how and in what order do they operate?

6. How do you account for the origin of the two orders, Patricians and Plebeians, in the Roman State, and indicate in chronological order the principal steps, measures, and causes that led to the equalization of the orders?

7. What was the *Jus Honorarium*, and point out briefly how it was formed, and in what way it influenced Roman Jurisprudence?

8. Indicate some of the principal events that affected Roman Law and Legislation in the first and also in the second period of the Republic.

9. How were the Roman Provinces governed?

10. By what means was uniformity of jurisprudence promoted throughout the whole empire?

11. Who are styled the great luminaries of Roman Law, and when did they live?

12. Point out briefly some of the advantages of the study of Roman Law to the student of the present day.

N.B.—(Students will answer any eight of the questions, and no more.)

FIRST YEAR.

CIVIL PROCEDURE.

Examiner, ...MR. HUTCHINSON.

1. Before whom must an affidavit made in a foreign country be sworn in order that it may be entitled to credence in our Courts?

2. In order to bring an action in *forma pauperis* before a Court of this Province what is necessary to be established; and when and from whom is this authority obtained?

3. A owes B $200 for rent of the house he occupies, and also $200 on a

promissory note, can B join the two causes of action in the the same suit? If not, why not?

4. A minor is run over in the street and badly injured through the carelessness of a carter. He wishes to bring an action in damages against the carter, how can he do so?

5. If a defendant in a suit appear and plead in person, where can the plaintiff serve him with an inscription or notice of the trial?

6. Two merchants have dealings together in New York by which one becomes personally indebted to the other in $500, under what circumstances can a suit be instituted in our Superior Court for the recovery of this debt?

7. A husband and wife are domiciled in Montreal: the wife leaves him and goes to reside in Toronto, and afterwards wishes to take an action for separation from bed and board. Before the Court of what place must such an action be taken?

8. If there are several defendants in the same suit, residing in different jurisdictions beyond the District of Montreal, and one of them is served personally at Montreal, can the others, although served in their own jurisdictions, be brought before the Court of the District of Montreal? How would it be if the defendants all resided in the same jurisdiction, and one of them be served personally in Montreal?

9. How many kinds of preliminary exceptions are there, and within what delay must they be fyled?

10. What is a declinatory exception? Give an example of a case in which such an exception could be fyled.

11. What is a dilatory exception? Give an example of a case in which such an exception could be fyled.

12. In what cases, where the debt is for goods sold and delivered, is it impossible to obtain a judgment by default for non-appearance upon the affidavit of the plaintiff?

FIRST YEAR.

CRIMINAL LAW.

Examiner,..... .....PROFESSOR ARCHIBALD.

1. What are the sources of our criminal law?

2. What proof would be requisite to support a defence of insanity?

3. Define the following terms:—

"Principal in the first degree."
"Principal in the second degree."
"Accessory before the fact."
"Accessory after the fact."

4. What limitations of responsibility for criminal acts exist in favor of married women?

5. Define burglary and larceny.

6. Discuss particularly the nature of the breaking and entering which constitute elements of burglary.

7. Define the expression "current coin."

8. What is conspiracy? If brokers agree together before a sale by auction that one only of them should bid for each article sold, and that all the articles thus bought by any of them should be sold again among themselves for a fair price, and the difference between the auction price and the fair price should be divided among them, is this a conspiracy, and state your reasons?

9. Point out the difference between larceny and embezzlement.

10. A gave his clerk £5, out of which he was to pay for an advertisement; he paid £1, but told A he had paid £2, and accounted with A accordingly. Of what offence, if any, was the clerk guilty, giving reasons?

11. If a beggar obtains a gift of money by making false statements as to his condition, what offence, if any, is he guilty of, giving reasons?

12. Mention the principal felonies which do not admit of accessories before the fact, giving reasons in each case?

(N. B. Students are to answer eight questions only at their option.)

FIRST YEAR.

HISTORY OF CANADIAN LAW.

Examiner, ...M. LAREAU.

1. Quelles sont les principales sources du droit Canadien?

2. Nommez les grandes ordonnances du droit Français, antérieures à l'établissement du Conseil Supérieur de Québec; dites la date de leur publication.

3. Veuillez décrire le système judiciaire en vigueur sous la domination Française ?

4. A quelle date remonte l'établissement du Conseil Supérieur de Québec, et comment était-il composé ?

5. Nommez les principales chartes qui ont régi le Canada sous la domination Française ?

6. Quelles sont les principales dispositions contenues dans l'acte de Québec (1774) ?

7. Quelles sont les principales dispositions contenues dans l'acte constitutionnel de 1791 ?

8. Quelles sont les principales dispositions contenues dans l'acte constitutionnel de 1840 ?

9. Mentionnez les principales dispositions législatives qui ont été adoptées de 1791 à 1840.

10. A quelle date le Code Civil est-il devenu en force ?

11. Quelles sont les principales dispositions législatives qui ont été adoptées de 1840 à 1867 ?

12. Faites l'historique de la question des Réserves du Clergé.

(N.B.—M.M. les Étudiants répondront à huit questions sur douze, à leur choix.)

FIRST YEAR.

CIVIL LAW.

Examinateur.....PROFESSEUR ROBIDOUX.

1. Quelles sont les principales incapacités résultant de la mort civile ?

2. De quelle manière les actes de l'état civil sont-ils inscrits sur les régistres ?

3. Comment la loi punit-elle la contravention aux règles concernant la tenue des régistres de l'état civil?

4. Que doivent faire les dépositaires d'un régistre de l'état civil lorsque la rectification en a été obtenue ?

5. Qu'est-ce que le domicile ?

6. Quel est le domicile de la femme mariée non séparée de corps? du mineur non émancipé? du majeur interdit pour démence ? des majeurs

qui servent et travaillent habituellement chez autrui ? Quels sont les effets de l'élection de domicile ?

7. Qu'entend-on par absent ? Dans quels cas peut-on nommer un curateur aux biens d'un absent ? Comment est-il statué sur la nécessité de nommer un curateur aux biens d'un absent ?

8. Quand peut-on se faire envoyer en possession provisoire des biens d'un absent ?

9. Quels sont ceux qui peuvent être envoyés en possession provisoire des biens d'un absent ? Que doivent-ils faire avant d'entrer en possession ?

10. Quels sont les effets de l'absence relativement au mariage ?

11. A qui appartient le droit de former opposition à la célébration d'un mariage ?

12. Dans quels cas et par qui la nullité d'un mariage peut-elle être demandée ?

(N.B.—Ceux qui concourent pour la médaille sont tenus de répondre à toutes les questions. Ceux qui ne concourent pas ne sont tenus que de répondre à huit des questions, à leur choix.)

SECOND AND THIRD YEARS.

ROMAN LAW.

FRIDAY, MARCH 12TH :—3 TO 5 P.M.

Examiner,.....N. W. TRENHOLME, M.A

1. Indicate the different kinds of ownership known to the Romans, and the nature of the protection enjoyed by each.

2. What are the principal modes of acquiring property given in the Institutes ?

3. Point out the importance of the part played by the theory of acquisition by *occupatio*, and discuss the merits of the claims of *occupatio* as an original means of acquiring individual ownership.

4. When is a person a *bona fide* possessor, and indicate the rights he enjoys against the proprietor claiming the property ? What difference is there between his rights and those of a possessor not in good faith ?

5. Explain the terms : *res mancipi, res nec mancipi ; usucapio, prescriptio, usufructus, usus.*

6. What were the different kinds of wills known to the Romans, and the

periods respectively in which they were in use, and give the requirements of each? What wills exist in our law, and whence derived?

7. Give the order of abintestate succession by the law of the XII Tables, and by the Legislation of Justinian?

8. A dies worth $100,000, leaving surviving him a father, two brothers, three nephews, children of a deceased sister, and also a half-brother and half-sister. How would his estate be divided by our Code, and how under the Legislation of Justinian?

9. Of what is community of property composed, and when does it exist, and when does it not exist?

The same question as to dower.

10. By what means are we able to know anything of Roman Law and institutions for the period anterior to the XII Tables.

11. Point out the principal changes which the Roman Constitution underwent in the course of its history, and some of the causes that brought about these changes?

12. What were *comitia curiata*, *comitia centuriata*, *comitia tributa*, *leges*, *plebiscita*, *senatus consulta*, *principum placita*, *responsa prudentum*, *jus Latinum*, *jus Italicum*, *jus gentium*?

(Students will answer any eight of the questions and no more, except students of the third year competing for the medal, who will answer all twelve.)

SECOND AND THIRD YEARS.

COMMERCIAL SALES-INTERNATIONAL LAW, PUBLIC AND PRIVATE.

Examiner,.....W. H. KERR, Q.C., D.C.L.

1. What is the meaning of Domicil in Private International Law? What is Domicil of origin? How is it changed? On abandonment of Domicil of choice what is the consequence?

2. What law regulates the capacity and rights of married persons? What effect has the domicil of the husband and wife upon their respective rights? In the event of a change of domicil during marriage, what consequences follow.

3. A and B are married in a country where divorce is not allowed: they afterwards remove to a state where the tribunals exercise the power of decreeing divorces: A there sues B for, and obtains a divorce; what is the

effect of such decree in other states, especially in the state in which the marriage took place?

4. A and B are cousins, subjects of a state in which marriage between such relations is prohibited. They contract a marriage in England, where one of them, A, is domiciled. Would such a marriage be considered valid by the English Courts? State the reasons for your opinion, and cite any modern cases in which the question has arisen.

5. What is the right of lien? When and in what cases does it arise? When does it cease to exist?

6. What is the right of stoppage *in transitu?* When and in what cases does it arise? When does it cease to exist?

7. What is the meaning of the words "reservation of the *jus disponendi?*" In cases of sale, how is the *jus disponendi* reserved? Where the goods are delivered on board the vendee's own vessel, is it possible to reserve the *jus disponendi?* If yea, how?

8. What is a warranty? How many kinds of warranties are there? Define the different kinds. What are the remedies of the vendee for breach of warranty in a commercial sale?

9. Give a definition of war? What is its effect upon the subjects of the respective states engaged? How are their contracts affected? How is enemy's property within the territory of a belligerent affected?

10. Define neut rality. What are the rights of neutrals? What are their duties? Can a neutral sell a ship of war (unarmed) to a belligerent?

11. What rights have belligerents on the high seas? What is the difference between booty and prize? What courts are Prize Courts? How are they constituted? By what rules are they governed?

12. What is the rule as to property belonging to an enemy on board a neutral vessel searched by a belligerent? What is the rule as to neutral property on board an enemy's vessel captured by a belligerent? Give the changes if any, in the law of nations, or in their practice down to the present time.

SECOND AND THIRD YEARS.

CRIMINAL PROCEDURE. CONSTITUTIONAL LAW. ELECTION LAW.

Examiner,.....PROFESSOR ARCHIBALD.

1. What is arraignment, and describe the procedure connected with it?

2. By what proceedings may the defendant take advantage of informalities or insufficiencies in an indictment, and when must such proceedings be adopted?

3. A is indicted for libel, and the indictment does not set up the exact words used in the libel: Move to quash.

4. Draw an indictment charging B with the larceny of five hogs on the 1st January, four sheep on the 1st February, and three cows on the 1st March, all the property of C.

5. Draw an indictment against D, who was A's clerk, for the embezzlement of $5 on the 1st March, 1880.

6. A, a married man, pays his addresses to B, and obtains from her a promise of marriage, representing himself as a bachelor. B changes her mind and refuses to marry A. A thereupon threatens an action for breach of contract, and obtains £100. Has he committed a criminal offence? If so, draw an indictment against him.

7. What is the nature of the representations which are requisite to support an indictment for false pretences?

8. Is the Dominion Controverted Elections Act of 1874 constitutional, and give your reasons?

9. Would the same reasoning as to the constitutionality of the controverted Elections Act apply also to the Insolvent Act, and give reasons?

10. What are the subjects upon which the Federal and the Local authorities may exclusively make laws, and what is the general rule in reference to unenumerated matter?

11. Are there any limits to the powers of the Federal and Local Legislatures to make laws other than those which result from the division of authority between them, and state them?

12. What are the principal corrupt practices which are sufficient to annul an election under the Dominion Act?

(N. B. Students not competing for the medal are to answer only eight questions at their option. Medal students compete upon the whole paper.)

SECOND AND THIRD YEARS.

CIVIL LAW.

Examiner,.....M. LAREAU.

1. Comment s'estime la valeur de la rente viagère garantie sur un immeuble vendu par décret forcé ; comment s'établit la collocation entre les divers créanciers hypothécaires et dites ce qu'était l'ancien droit (avant le code) sur ces matières ?

2. Une transaction est faite entre les parties au procès ; peu après des documents qui leur étaient inconnus sont découverts : est ce qu'il y a lieu à rescision de la transaction ? *Quid*, quant aux erreurs de calcul ?

3. Dans quels cas la caution qui s'est engagée du consentement du débiteur peut elle agir contre lui, même avant d'avoir payé, pour en être indemnisée ?

4. Combien il y a-t-il de sorte de cautionnement ?

5. La caution judiciaire peut elle demander la discussion du débiteur principal ?

6. Quest-ce que le contrat de nantissement ?

7. Qu'est-ce qu'un gage ?

8. Le gage est-t-il divisible ? *quid*, si la dette est divisible ?

9. Quels sont les droits et les obligations du locateur ?

10. Qu'est-ce que le contrat de jeu et de pari ?

11. Qu'est-ce qu'un bail à cheptel ?

12. Le locateur est il tenu de garantir le preneur du trouble apporté par des tiers ?

(N.B.—*Pour le dégré* 8 questions *ad libitum ; de* 1 *à* 12 *inclusivement pour le prix.*)

SECOND AND THIRD YEARS.

CIVIL PROCEDURE.

Examiner,.....MR. HUTCHINSON.

1. Under what circumstances can an imprisoned debtor obtain an alimentary allowance, and for what amount ?

2. Prepare a form of affidavit for a capias based on the ground that the defendant is about to leave the country.

3. Can a capias issue for a debt contracted in the Province of Ontario? Can an attachment before judgment issue for a debt contracted in that Province? What would be your answer in each case if the debt was contracted in New York?

4. When may a writ of capias be contested together with the merits of the case?

5. Can a writ of capias issue against a defendant after a writ of attachment under the Insolvent Act of 1875 has issued against him? If so, under what circumstances?

6. What is the nature of the bail which a debtor imprisoned under a writ of capias must give to obtain his discharge? How many kinds of bail are there; and on what kind of property must the sureties justify?

7. If the things seized under a writ of simple attachment before judgment be of a perishable nature can an order be obtained before judgment to have them sold? If the things were seized under a writ of revendication what would be your answer?

8. What persons can make the necessary affidavit on which a writ of capias may issue? a writ of simple attachment before judgment, and a writ of revendication?

9. If a tenant owes his landlord $500 for five months rent, how can the landlord bring his action for the recovery of this rent under the Lessor and Lessee's Act, and so proceed summarily?

10. Is an affidavit required by law in the case of every seizure before judgment; must the declaration be served with the writ in each case? If not, what exceptions?

11. What public notices are required in an action, between consorts for separation as to property? Also in an action in separation from bed and board?

12. In separation suits between consorts what exception is there to the general rule as to proof?

SECOND AND THIRD YEARS.

CIVIL LAW.

Examiner,..... ....PROFESSEUR ROBIDOUX.

1o. Comment s'établit l'usufruit?

2o. Que faut-il entendre par fruits naturels? par fruits industriels? Par fruits civils?

3o. Quand les bois sont-ils considérés comme des fruits? Dans quels cas sont-ils considérés comme un capital auquel l'usufruitier ne peut pas toucher?

4o. Quelles sont les obligations de l'usufruitier avant d'entrer en jouissance? pendant sa jouissance? après sa jouissance?

5o. Comment l'usufruit prend-il fin?

6o. Qu'est-ce que le droit d'usage? le droit d'habitation? En quoi ressemblent-ils principalement à l'usufruit et en quoi en diffèrent-ils?

7o. Qu'est-ce qu'une servitude? Comment sont créées les servitudes? Qu' entend-on par fonds servant et fonds dominant?

8o. Qu' est-ce que le bornage? A quelle époque peut-il être demandé? Qui peut le demander? Aux frais de qui est-il fait?

9o. Qu'est-ce qu'un mur mitoyen? Quels murs sont réputés mitoyens? Quand la présomption de mitoyenneté cesse-t-elle?

10o. Qu'est-ce qu'une vue droite? Qu'est-ce qu'une vue oblique? Quelle distance doit-il y avoir, quant aux vues droites, entre le mur où elles sont établies, et l'héritage voisin? Quelle distance, quant aux vues obliques?

11o. Quel droit la loi accorde-t-elle au propriétaire d'un fonds enclavé? *Quid* si l'héritage est enclavé par suite d'un partage?

12o. Qu'est-ce qu'une servitude continue? Discontinue? Apparente? Non-apparente?

Donnez des exemples.

(N.B.—Les étudiants qui ne concourrent pas pour la médaille ne sont tenus de répondre qu'à huit des questions à leur choix; ceux qui concourrent, doivent répondre à toutes les questions.)

FACULTY OF MEDICINE.

SESSIONAL EXAMINATIONS, 1880.

BOTANY.

Examiner,.....J. W. DAWSON, LL.D., F.R.S., &c.

1. Explain the relations of Carbonic Acid and Ammonia to the nutrition of the plant.

2. What ingredients are specially needed in fertile soils, and what are the causes of exhaustion of soils?

3. Name the circles of organs in a perfect flower, and describe the structures of the Anther and Pistil.

4. Describe the Ovule, its positions, and the relations of its parts to those of the seed.

5. Explain Coalescence and Adnation of the parts of the Flower, with examples.

6. Describe the leading kinds of Indefinite Inflorescence, with examples?

7. Describe the several coats of the Pericarp, with some of their modifications.

8. Explain the distinction between Albuminous and Exalbuminous Seeds.

9. Describe the organs indicated by the terms Receptacle, Gynœcium, Involucre, Testa, Sporangium.

10. What is the distinction between Coma and Pappus, and between a Drupe and a Berry?

11. Explain the gradation of higher and lower groups in the natural system, with an example.

12. State shortly the characters of the Classes of the Vegetable Kingdom.

13. Refer the specimens exhibited to their Series and Class, and describe the Forms of their Leaves and the character of their Inflorescence.

INSTITUTES OF MEDICINE.

Examiners, ... { PROF. DRAKE, M.D. / PROF. OSLER, M.D.

1. Describe the tissues which enter into the composition of an artery.

2. Red blood corpuscles of man, structure and composition.

3. The changes in the air in Respiration.

4. The action of the digestive ferments (fully).

5. Describe fully the mechanism of the secretion of the Urine.

6. The functions of the 3rd nerve.

7. Give an outline of the current views regarding cerebral localization.

8. What are the functions of the Placenta?

9. Explain the terms 'miasm,' 'contagion,' 'infection,' 'zymotic,' 'endemic,' 'epidemic.'

10. Under what conditions may Thrombosis occur in the body? and state the changes which a thrombus may undergo.

MEDICAL JURISPRUDENCE.

Examiner,.....PROF. W. GARDNER, M.D.

1. Give the post-mortem appearances in death by cold, starvation and lightning respectively.

2. What are the tests for Semen.

3. What discharges from the female genital organs may be confounded with those induced by attempts to commit rape; and how would you distinguish them.

4. Enumerate the signs of pregnancy, and describe those that are 'certain.'

5. What are the signs of recent delivery in the dead; and of a previous delivery in dead or living.

HYGIENE

Examiner,.....PROF. W. GARDNER, M.D.

1. Define surface-water, ground-water and deep-seated water. Objections to ground-water for drinking purposes, and how remedied.

2. Diseases produced or conveyed by impure drinking-water.

3. Dangers from admission of ground-air to dwellings, how to prevent it.

4. Principal systems for the removal of human excreta; those best suited to country houses and villages.

5. Source of infection in Small-pox, Scarlet-fever, Measles and Enteric Fever respectively. How to combat it by disinfectants.

6. Effects of over-exertion.

PRACTICE OF MEDICINE.

Examiner,.....PROF. HOWARD, M.D.

1. Diagnosis between Croup and Laryngismus stridulus. Explain Pathology of latter.

2. Describe the eruption, the stools and the typical temperature of typhoid fever.

3. The morbid anatomy of Croupous Pneumonia.

4. The treatment of Acute Pleuritis in all its stages.

5. The diagnosis between Renal and Cardiac Dropsy, the treatment of the latter.

6. The chief symptoms of early stage of Chronic Phthisis.

7. The alleged symptoms of functional stage and of advanced stage of cirrhotic kidney.

8. The diagnostic features and modes of termination of aortic regurgitation.

9. The diagnosis of embolism of left middle cerebral artery.

10. The remedies and their doses for an attack of spasmodic asthma and the passage of renal calculus.

11. The symptoms of jaundice from obstruction, and the principles of treatment when the obstruction is permanent.

M.D., C.M., PRIMARY EXAMINATION.

ANATOMY.

Examiner,.....PROF. WM. E. SCOTT, M.D.

1. What are the branches and relations of the arch of the aorta?

2. What is the origin, course, branches and distribution of the internal pudic artery?

3. Describe the two inguinal rings. Where are they situated? Give the length and boundaries of the inguinal canal.

4. What are the ligaments of the knee joint? To what class of articulations does the knee belong? What muscles are in relation with it?

5. Name the muscles that are supplied by the following nerves, viz. :—
   Musculo-cutaneous.
   Median.
   Ulnar.
   Musculo-spinal.
   Pudic.
   Great Sciatic.

6. What passes through the following fissures :—
   Glaserian.
   Pterygo-maxillary.
   Spheno-maxillary.
   Sphenoidal.
   Transverse or Porta

MATERIA MEDICA.

Examiner,.....PROFESSOR WRIGHT, M.D.

1. Give a short account of the actions of Diuretics generally, and of Copaiba in particular.

2. What essential oils do not pre-exist in the sources whence they can be got. State their composition and operations.

3. Epsom salts : how made, and when taken how do its effects differ from those of alum, cream of tartar, nitre and rhubarb.

4. Specify two or three of the constituents of cod liver oil, and the way to separate and test them.

5. Mention some remedies suitable in Hœmoptysis and the doses of their preparations.

6. Name the best eliminatives to depurate the blood in chronic metallic poisoning, and relate some other uses to which they can be applied.

CHEMISTRY.

Examiners..... { PROFESROR CRAIK, M.D.
PROFESSUR GIRDWOOD, M.D.

1. Give an account of oxygen, its properties, mode of preparation, occurrence in nature, and the names given to its principle compounds.

2. What are the properties of the metals of groups of the alkalis, and alkaline earths?

3. What are the different varieties of electricity, their sources and qualities?

4. What do you mean by the terms dimorphism, isomorphism, allotropy giving examples of each?

5. What do you mean by a saturated hydrocarbon? What are their general properties and formulæ?

6. What do you mean by an alcohol? What are the differences between a monatomic, diatomic, triatomic alcohol; from what are they derived?

M.D., C.M., FINAL EXAMINATION.

OBSTERICS.

Examiner,..... PROFESSOR D. C. MACCALLUM, M.D.

1. Describe the different methods of inducing premature labour, and state what you consider to be the merits of, or the objections to, each method.

2. When the conditions of labour render it necessary to perforate the head of the child, how would you complete the delivery?

3. Describe the different ways in which version of the child may be performed.

4. Called to a patient in an advanced stage of gestation, and finding her prostrate, with a rapid pulse, blanched face, anxious countenance, and clammy perspirations, to what may these symptoms be attributed, and what would you do for her relief?

5. Give the different signs of Pregnancy, and describe how *bullottement* is performed.

6. In how many ways may Inflammation of the Gravid Uterus terminate, and what is its treatment?

7. What conditions of the Nipple interfere with Lactation, and how may they be relieved?

8. Give the symptoms and treatment of Abortion occurring at an early period of Gestation.

9. Describe the symptoms and treatment of Purulent Ophthalmia in the infant.

10. Describe the soft parts of the mother through which the child passes in its exit from the uterus to the external world.

PRINCIPLES AND PRACTICE OF SURGERY.

Examiner,.....PROF. G. E. FENWICK, M.D.

1. Give the boundaries of the Ischio-rectal fossa, and mention the structures which occupy that space?

2. Mention the diseases which give rise to extravasation of urine, state the anatomical reason for the course usually taken by the urine in such cases, and the treatment you would adopt.

3. Fracture of the bones of the fore-arm in which the median nerve is injured, what symptoms would indicate that lesion?

4. What is Varicocele? What effects are likely to follow in severe cases?

5. Continued and persistent vomiting. Mention the surgical diseases or injuries which would give rise to this condition.

6. Acute Periostitis. Give causes, symptoms, terminations, and treatment.

7. State what conditions may cause Earache, and give an outline of the treatment appropriate in each.

8. Pyæmia, what is it? Give the causes, symptoms, results and treatment.

UNIVERSITY SCHOOL EXAMINATIONS, 1880.

PRELIMINARY SUBJECTS.

GEOGRAPHY.

WEDNESDAY, MAY 19TH:—AFTERNOON, 2 TO 4.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L.
REV. J. CLARK MURRAY, LL.D.
CHAS. E. MOYSE, B.A.
REV. PROF. SCARTH, M.A.

1. Give the names and indicate the positions of the zones of the earth. Explain the terms *isthmus*, *peninsula*, *tributary*, *equator*, *longitude*.

2. Name the Continents of the Eastern Hemisphere.

3. Name the large sheets of water which touch the shores of *one* of those Continents.

4. Name the chief rivers which flow into any *two* of those sheets.

5. Name the countries of the Continent you have chosen, and point out their relative situations.

6. Name *four* prominent capes of one of the remaining Old World continents, and tell where they lie.

7. Name *three* of the largest lakes of the continent of Question 6, and mention in what locality each is to be found.

8. Name the countries or states in which the following places are situated:—Lisbon, Tomsk, Archangel, Rouen, Calcutta, Berlin, Fez, Teheren, Cabul, Cairo. Underline those which are capital cities.

9. Name, in due order, the countries of South America which border on the sea, and their capitals.

10. Name the Provinces of the Dominion to which these cities or towns belong: Three Rivers, Brockville, St. John, Ottawa, Charlottetown.

11. Name *five* bays and *five* straits of British North America, and describe the situation of each.

THE GOSPELS.

WEDNESDAY, MAY 19TH:—AFTERNOON, 4 TO 5.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L.
REV. J. CLARK MURRAY, LL.D.
CHAS. E. MOYSE, B.A.
REV. PROF. SCARTH, M.A.

1. Who was our Lord's Forerunner? What was the manner of his life? State the circumstances attending his death.

2. Mention the three temptations with which Satan assailed our Lord in the wilderness.

3. How many miracles of raising the dead did our Lord perform? Mention each.

4. Give the substance of the parable of the sower with the interpretation.

5. Give the account of our Lord's resurrection; also of His last appearance to the disciples at the sea of Tiberias.

EMGLISH GRAMMAR.

THURSDAY, MAY 20TH:—MORNING, 9 TO 12.

Examiners, ... { VEN. ARCHDEACON LEACH, D.C.L.
REV. J. CLARK MURRAY, LL.D.
CHAS. E. MOYSE, B.A.
REV. PROF. SCARTH. M.A.

1. Enumerate the parts of speech, and underline those which are inflected.

2. Define a noun, and name the leading classes into which nouns may be divided. Give an example of each class.

3. What do you mean by saying that one word qualifies another? Can a qualifying word be qualified?

4. Write the feminine forms of, lord, czar, hero, gander, drake, bull executor, heir, buck, bachelor.

5. Give the present participle, the past tense (one person only), and the past participle of each of these verbs: —run, lie, lay, singe, fly, sing, set, sit, betide, die.

6. To what parts of speech may each of the following words—but, that, iron, who—belong?

7. Explain these grammatical terms:—indirect object, nominative absolute, apposition, strong verb.

8. Construct a Simple, a Complex, and a Compound sentence; also (*a*) a sentence having a Noun Sentence as its subject (*b*) a sentence having a Noun Sentence as its object.

9. Parse:—

Ring out the want, the care, the sin,
The faithless coldness of the times;
Ring out, ring out my mournful rhymes,
But ring the fuller minstrel in.

10. Change the adjectives of the above sentence into their corresponding adverbs.

11. Analyse the sentence of question 9.

ARITHMETIC.

FRIDAY, MAN 21ST:—MORNING, 9 TO 12.

Examiners,..... { REV. PRINCIPAL LOELEY, D.C.L.
GEORGE H. CHANDLER. M.A.

1. From seven millions seven thousand and seventy substract four hundred and forty thousand and forty-four, and express the rosult in words.

ii. Write down the first five significant figures; write them in the reverse der; add together the two numbers thus obtained; multiply the sum b⊱d two hundred; and express the answer in Roman notation.

iii. Give the tables for Avoirdupois and Troy weights. Express a pound Troy as a fraction of a pound Avoirdupois, and reduce the fraction to its lowest terms.

4. How much per day is £34 4s. 4½d. a year?

5. Add together $\frac{2}{7}$, $\frac{3}{5}$, $\frac{4\frac{4}{9}}{6\frac{8}{11}}$, $\frac{8}{25}$ of $2\frac{11}{12}$, and $\frac{\frac{3}{5}-\frac{1}{7}}{\frac{5}{9}-\frac{1}{2}}$.

vi. Subtract .3725 from 3.725; divide the remainder by the square of ·0032; and reduce the result to its simplest form.

7. Express .06078125 of a mile in yards, feet, and inches.

8. What sum will amount to $605 in 2½ years at 4 per cent., simple interest?

ix. If a block of marble 8 feet long, 4 feet wide, and 2 feet thick, weigh 8,550 lbs., what will be the weight of another block of marble 6 feet long, 6 feet wide, and 4 feet thick?

10. Find the discount on £6174 due in 2 years, compound interest being reckoned at 5 per cent. per annum.

xi. A can do a piece of work in 12 days, and A and B together can do it in 5 days; in what time can B alone do it?

12. Find the change of income which will result from selling out $7,000 from 5½ per cent. stock at 112½, and investing the proceeds in 6½ per cents at 122½.

xiii. The area of a circle of radius r is πr^2, where $\pi = 3 + \frac{1}{7+\frac{1}{16}}$. Find the radius of a circle of which the area is 340 square inches.

BRITISH AND CANADIAN HISTORY.

FRIDAY, MAY 21ST:—AFTERNOON, 2 TO 5.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L.
REV. J. CLARK MURRAY, LL.D.
CHAS. E. MOYSE, B.A.
REV. PROF. SCARTH, M.A.

1. What races of men have successively invaded England, and when?

2. What dynasties have sat on the throne of England since the Roman onquest?

3. Name the English Sovereigns who reigned during the course of the *seventeenth* century.

4. Mention *one* event in the reign of each of them.

5. Describe *one* of those events as fully as you can.

6. Why should the dates 1215, 1265, 1534, 1832 be remembered?

7. When were Ireland, Scotland, and Wales *first* conquered by the English?

8. Name a battle fought by Englishmen in each of the following countries, and say in whose reign it occurred;—France, Spain, Portugal, Russia.

9. State *two* facts concerning: (*a*) The Domesday Book, (*b*) Thomas à Becket, (*c*) Wat Tyler, (*d*) The Field of the Cloth of Gold, (*e*) John Knox, (*f*) Robert Clive.

10. Tell what you know of Jacques Cartier.

11. When did Canada become a possession of England? By what treaty?

12. Mention *one* famous event in the life of each of these men;—Champlain, Braddock, Montcalm, Papineau.

OPTIONAL SUBJECTS.

GREEK.

WEDNESDAY, MAY 26TH:—MORNING, 9 TO 12.

Examiners, ... { RRV. GEORGE CORNISH, LL.D. / REV. CANON NORMAN, D.C.L.

---

1. Translate Homer, Iliad, Book IV.:—

(*a*) *Ὣς ἔφατ', οὐδ' ἀπίθησε πατὴρ ἀνδρῶν τε θεῶν τε*
αὐτίκ' Ἀθηναίην ἔπεα πτερόεντα προσηύδα
"Αἶψα μάλ' ἐς στρατὸν ἐλθὲ μετὰ Τρῶας καὶ Ἀχαιούς,
πειρᾶν δ' ὥς κε Τρῶες ὑπερκύδαντας Ἀχαιοὺς
ἀρξωσι πρότεροι ὑπὲρ ὅρκια δηλήσασθαι."
Ὣς εἰπὼν ὤτρυνε πάρος μεμανῖαν Ἀθήνην,
βῆ δὲ κατ' Οὐλύμποιο καρήνων ἀΐξασα.
οἷον δ' ἀστέρα ἧκε Κρόνου παῖς ἀγκυλομήτεω,
ἢ ναύτῃσι τέρας ἠὲ στρατῷ εὐρέϊ λαῶν,

λαμπρόν· τοῦ δέ τε πολλοὶ ἀπὸ σπινθῆρες ἵενται·
τῷ εἰκυῖ' ἤϊξεν ἐπὶ χθόνα Παλλὰς 'Αθήνη,
κὰδ δ' ἐθορ' ἐς μέσσον· θάμβος δ' ἔχεν εἰσορόωντας
Τρῶάς θ' ἱπποδάμους καὶ ἐϋκνήμιδας 'Αχαιούς.

(*b*) Τὸν δ' ἀρ' ὑπόδρα ἰδὼν προσέφη κρατερὸς Διομήδης
"τέττα, σιωπῇ ἧσο, ἐμῷ δ' ἐπιπείθεο μύθῳ.
οὐ γὰρ ἐγὼ νεμεσῶ 'Αγαμέμνονι, ποιμένι λαῶν,
ὀτρύνοντι μάχεσθαι ἐϋκνήμιδας 'Αχαιούς·
τοὔτῳ μὲν γὰρ κῦδος ἅμ' ἕψεται, εἴ κεν 'Αχαιοὶ
Τρῶας δηώσωσιν ἕλωσί τε Ἴλιον ἱρὴν,
τούτῳ δ' αὖ μέγα πένθος 'Αχαιῶν δηωθέντων.
ἀλλ' ἄγε δὴ καὶ νῶϊ μεδώμεθα θούριδος ἀλκῆς."
Ἦ ῥα καὶ ἐξ ὀχέων σὺν τεύχεσιν ἅλτο χαμᾶζε·
δεινὸν δ' ἔβραχε χαλκὸς ἐπὶ στήθεσσιν ἄνακτος
ὀρνυμένου· ὑπό κεν ταλασίφρονά περ δέος εἷλεν.

2. (*a*) Give the name and scale of the metre of the above extt. (*b*) Scan, carefully marking off the feet and quantities, the first five vss. of ext. (*a*), and note any metrical peculiarities. (*c*) What was the Digamma, and by what letters is it represented in Latin and English?

3. Parse the following:—*βῇ, καρήνων, ἀίξασα, ἔηκε, ἧσο, ἕψεται, δηώσωσιν, ἕλωσι, ἔσαν, ἅλτο.*

4. Give as accurately as you can the derivation and meaning of:—*ἀγκυλομήτεω, ἱπποδάμους, ἐυκνήμιδας, τέττα, χαμᾶζε, χαλκός, πολυηχέι, πολύκλητοι, γλαυκῶπις, ἁρματοπηγός.*

---

5. Translate, Xenophon, Anabasis, Book II.:—

(*c*) *Καὶ οἱ μὲν ἡγοῦντο, Κλέαρχος μέντοι ἐπορεύετο τὰς μὲν σπονδὰς ποιησάμενος, τὸ δὲ στράτευμα ἔχων ἐν τάξει, καὶ αὐτὸς ὠπισθοφυλάκει. καὶ ἐνετύγχανον τάφροις καὶ αὐλῶσιν ὕδατος πλήρεσιν, ὡς μὴ δύνασθαι διαβαίνειν ἄνευ γεφυρῶν· ἀλλ' ἐποιοῦντο διαβάσεις ἐκ τῶν φοινίκων οἳ ἦσαν ἐκπεπτωκότες, τοὺς δὲ καὶ ἐξέκοπτον. Καὶ ἐνταῦθα ἦν Κλέαρχον καταμαθεῖν ὡς ἐπεστάτειε ἐν μὲν τῇ ἀριστερᾷ χειρὶ τὸ δόρυ ἔχων, ἐν δὲ τῇ δεξιᾷ βακτηρίαν· καὶ εἴ τις αὐτῷ δοκοίη τῶν πρὸς τοῦτο τεταγμένων βλακεύειν, ἐκλεγόμενος τὸν ἐπιτήδειον ἐπαισεν ἄν, καὶ ἅμα αὐτὸς προσελάμβανεν εἰς τὸν πηλὸν ἐμβαίνων· ὥστε πᾶσιν αἰσχυνην εἶναι μὴ οὐ συσπουδάζειν.*

(*d*) *Ἀλλὰ καὶ λέγειν αὐτὸν ἐφασαν ὡς δέοι τὸν στρατιώτην φοβεῖσθαι μᾶλλον τὸν ἀρχοντα ἢ τοὺς πολεμίους, εἰ μέλλοι ἢ φυλακὰς φυλάξειν ἢ φίλων ἀφέξεσθαι ἢ ἀπροφασίστως ἰέναι πρὸς τοὺς πολεμίους. Ἐν μὲν οὖν τοῖς δεινοῖς*

ἤθελον αὐτοῦ ἀκούειν σφόδρα καὶ οὐκ ἄλλον ἡροῦντο οἱ στρατιῶται· καὶ γὰρ τὸ στυγνὸν τότε φαιδρὸν αὐτοῦ ἐν τοῖς προςώποις ἐφασαν φαίνεσθαι καὶ τὸ χαλεπὸν ἐρῤῥωμένον πρὸς τοὺς πολεμίους ἐδόκει εἶναι, ὥστε σωτήριον καὶ οὐκέτι χαλεπὸν ἐφαίνετο. Ὅτε δ' ἐξω τοῦ δεινοῦ γένοιντο καὶ ἐξείη πρὸς ἄλλους ἀρχομένους ἀπιέναι, πολλοὶ αὐτὸν ἀπέλειπον· τὸ γὰρ ἐπίχαρι οὐκ εἶχεν, ἀλλ' ἀεὶ χαλεπὸς ἦν καὶ ὠμός· ὥστε διέκειντο πρὸς αὐτὸν οἱ στρατιῶται ὥσπερ παῖδες πρὸς διδάσκαλον.

6. Translate the following short sentences giving any rule exemplified, or any special meaning, in the case of any particular words:—(α) δῆλος ἦν, ἐπιθυμῶν μὲν πλουτεῖν ἰσχυρῶς. (β) ἡμέρας καὶ νυκτὸς ἄγωνι ἐπὶ τοὺς πολεμίους. (γ) Ἄρχειν δὲ καλῶν μὲν καὶ ἀγαθῶν δυνατὸς ἦν. (δ) Οὗτοι ἔλεγον ὅτι Κῦρος τέθνηκεν, Ἀριαῖος δὲ πεφευγὼς εἴη. (ε) Δῆλον δ' τοῦτο τῇ ὑστεραίᾳ ἐγένετο.

7. (α) Parse ἤσθιον, θέμενοι, ἐξεπλάγη, συνέμιξα, αἰσθάνοιτο, ἀφικέναι. (β) Derive μνησικακήσειν, βοηθήσων, μισθοδοσίας, πανουργία, ναυσίπορος.

---

8. (α) Write down the Genitive Singular and Dative Plural of:—ἀνήρ, αἰδώς, ναῦς, πούς, κέρας. (β) Decline οὗτος, ἡδύς and ἀληθής.

9. (α) Give the rules for the Greek augments, with illustrations. (β) Give the uses of the Middle Voice, and of the Optative Mood.

10. Give the 1st person singular of the principal tenses of :—τυγχάνω, ἔχω, ἀφικνέομαι, αἱρέω, θνήσκω, κτείνω, ὁράω.

11. What prepositions govern the Genitive case, what the Dative, and what the Genitive and Accusative?

12. Put into Greek:—(α) I was the first to do it. (β) At the rising of the sun. (γ) To take it ill. (δ) Nothing is left but arms and valour. (ε) About the middle of the night.

LATIN.

TUESDAY, MAY 25TH:—MORNING, 9 TO 12.

Examiners,..... { REV. GEORGE CORNISH, LL.D
REV. CANON NORMAN, D.C.L.

---

1. Translate, Cicero, in Catilinam III.:—

(α) Ac ne longum sit, Quirites, tabellas proferri iussimus, quae a quoque dicebantur datae. Primum ostendimus Cethego signum: cognovit.

Nos linum incidimus: legimus. Erat scriptum ipsius manu Allobrogum senatui et populo, sese quae eorum legatis confirmasset facturum esse; orare ut item illi facerent quae sibi eorum legati recepissent. Tum Cethegus, qui paullo ante aliquid tamen de gladiis ac sicis, quae apud ipsum erant deprehensa, respondisset dixissetque se semper bonorum ferramentorum studiosum fuisse, recitatis litteris debilitatus atque abiectus conscientia repente conticuit. Introductus est Statilius: cognovit et signum et manum suam. Recitatae sunt tabellae in eamdem fere sententiam: confessus est. Tum ostendi tabellas Lentulo et quaesivi cognosceretne signum. Adnuit. Est vero, inquam, notum quidem signum, imago avi tui, clarissimi viri, qui amavit unice patriam et cives suos: quae quidem te a tanto scelere etiam muta revocare debuit. Leguntur eadem ratione ad senatum Allobrogum populumque litterae. Si quid de his rebus dicere vellet, feci potestatem.

2. (*a*) Express in *oratio recta* the clause "sese quae * * * legati recipissent." (*b*) Construe:—(*a*) proferri. (*b*) legatis. (*c*) bonorum ferramentorum. (*d*) recitatis litteris. (*e*) cognosceret. (*e*) Explain the meaning of tabellas, signum, linum incidimus.

3. (*a*) Before whom, and amid what events, were these orations severally delivered? What was the fate of the conspirators, and what important consequences followed to Cicero? (*b*) Write short explanatory notes on the following:—(*a*) Pro *clientelis provincialibus*. (*b*) Omnis *ingenuorum* multido: *libertinorum* hominum. (*c*) *Purpuratum* Gabinium. (*d*) Ad omnia *pulvinaria supplicatio* decreta est. (*e*) In *custodiam* dedisti.

---

4. Translate, Virgil, Eclogue VI.:—

(*b*) Namque canebat, uti magnum per inane coacta
Semina terrarumque animaeque marisque fuissent
Et liquidi simul ignis; ut his exordia primis
Omnia et ipse tener mundi concreverit orbis;
Tum durare solum et discludere Nerea ponto
Coeperit et rerum paulatim sumere formas;
Iamque novum terrae stupeant lucescere solem,
Altius atque cadant submotis nubibus imbres;
Incipiant silvae cum primum surgere, cumque
Rara per ignaros errent animalia montis.
Hinc lapides Pyrrhae iactos, Saturnia regna,
Caucasiasque refert volucres furtumque Promethei.

5. (*a*) Translate:— (*a*) Cantando puerum memini me condere soles. (*b*) Potum pastas age (*c*) Jupiter et laeto descendet plurimus imbri. (*d*) Laeto turgent in palmite gemmae. (*e*) Levi de marmore tota Puniceo stabis suras evincta cothurno. (*b*) Put into good English (*a*) lentus in umbra, (*b*) si mens non laeva fuisset, (*c*) deductum carmen.

6. (*a*) Give the gender, and, where necessary, the derivation, of tegmine,

cubili, rastros, contagia, culmine. (*b*) Also give the derivation and various shades of meaning of argutus, mollis, praesepia, puniceo.

7. Translate, Ovid, Fasti, I. :—

Ecce tibi faustum, Germanice, nuntiat annum ;
Inque meo primus carmine Janus adest.
Jane biceps, anni tacite labentis origo ;
Solus de Superis qui tua terga vides ;
Dexter ades ducibus, quorum secura labore
Otia terra ferax, otia pontus agit.
Dexter ades patribusque tuis, populoque Quirini :
Et resera nutu candida templa tuo.
Prospera lux oritur : linguisque animisque favete ;
Nunc dicenda bono sunt bona verba die.
Lite vacent aures ; insanaque protinus absint
Jurgia : differ opus, livida lingua, tuum.
Cernis, odoratis ut luceat ignibus aether ;
Et sonet accensis spica Cilissa focis ?
Flamma nitore suo templorum verberat aurum,
Et trêmulum summa spargit in aede jubar.

8. (*a*) Translate and explain :—(*a*) Et jus vertendi cardinis omne meum est. (*b*) Et levis argenti lamina crimen erat. (*c*) Stipis adjice causam (*d*) Avitas umbras, (*e*) Tenens dextra baculum clavemque sinistra.

9. What is the meaning of the name Fasti? State the object of this work, and the person to whom it was inscribed. (*b*) Who of the celestials was, according to tradition, the last to quit this earth. Illustrate the legend. (*c*) Who were Hecate, Quirinus, Martigena, and what was the length of the ancient Roman year ?

---

10. (*a*) Parse the following words, giving the principal parts of the verbs :—deductum, mōrīs, mōrĭs, concreverit, fultus, connixa, bacchare, uteretur, mitterent, subeatur, confessi sunt, lenierit. (*b*) Write down the *Nom. Sing.* and *Plu.* of the following :—ōrīs, ōrĭs, ossis, cohortis, viribus, boum, capitibus, roborum. (*c*) Give the *Gen. Sing.* and *Abl. Plu.* of :—crus, neuter, trux, aedes, cervix, mus, vir, mas. (*d*) Compare :—Malus, uber, ultra, gracilis, tenax, bene. (*e*) Write down the *Perfect*, *Supine*, and *Infinitive* of each of the following verbs :—emo, lavo, pando, crepo, audeo, vinco, fallo, parco.

11. Turn into Latin :—(1) He will give the soldiers ten sesterces apiece. (2) The general sent the bravest men to take the hill occupied by the enemy. (3) Cæsar, after setting the town on fire, led his forces across the river. (4) The Roman knights stood around the senate-house in order to defend the senators from danger. (5) Liars are not believed even when they speak the truth.

HISTORY.

(*Primers of Greece and Rome*, and *Collier's Great Events*.)

THURSDAY, MAY 27TH :—AFTERNOON, 2 TO 5.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L
J. CLARK MURRAY, LL.D.
CHAS. E. MOYSE, B.A.
REV. PROF. SCARTH, M.A.

1. How long did the Peloponnesian War last? Give the names of some of the leaders on either side.

2. What monarchies were formed from the Empire of Alexander the Great?

3. What period of time is embraced by the Second Punic War? Give an account of Scipio's invasion of Africa.

4. Under what emperor was Jerusalem destroyed? Mention some of the circumstances attending the close of the siege.

5. Name the three great leaders of the barbarians who overthrew Rome. What three great kingdoms arose out of the decaying Empire?

6. Give the date of the "Hegira." How and when was Western Europe delivered from the Moslem?

7. State the chief features of Charlemagne's policy. Describe the circumstance of his being crowned Emperor of the West.

8. Give an account of the rise of the Dutch Republic.

9. Give the history of the Hungarian struggle for independence in the present century.

10. When did the following persons live, and for what are they each famous—Alcuin, Chaucer, Raphael, Galileo, Buffon, Hayden?

ENGLISH LANGUAGE.

(Trench's *Study of Words*, Peile's *Primer*, and Smith's *Grammar*.)

SATURDAY, 29TH MAY :—MORNING, 9 TO 12.

Examiners,..... ..... { VEN. ARCHDEACON LEACH, D.C.L
J. CLARK MURRAY, LL.D.
CHARLES E. MOYSE, B.A.
REV. PROF. SCARTH, M.A.

1. Trench speaks of "the strange wealth and the strange poverty of the languages of savage tribes." Illustrate his meaning.

2. Contrast the primary and the present usages of the words, *resentment, retaliation, animosity;* and indicate the moral tendencies to which the change is due.

3. (*a*) What was the origin of the words, *algebra* and *heathen?* (*b*) What historical fact is implied in the origin of each?

4. Give instances to illustrate how the origin of new words is sometimes soon forgotten.

5. Explain the cause (*a*) of synonyms, (*b*) of the "desynonymising" process.

6. Distinguish the meanings of *hate, loathe, detest, abhor.*

7. Note anything peculiar in the formation of *kine, chamber, nightingale.*

8. State and illustrate the general direction of consonantal change in English.

9. (*a*) Distinguish isolating, agglutinative, and amalgamating languages. (*b*) Mention the principal languages of the amalgamating type, noting especially the family to which English belongs.

10. (*a*) What are the two most important parts of speech? (*b*) Explain how the other parts of speech arose.

11. Did the usage of writers arise from an endeavor to conform with existing rules of syntax, or were rules of syntax formed to account for the existing usage of writers?

12. Tell the history of our alphabet.

13. In the following sentence (*a*) give the requisite punctuation, (*b*) distinguish principal and subordinate clauses, (*c*) parse the nouns and verbs, (*d*) explain the nature of the versification:—

"I would not enter on my list of friends
Though graced with polished manners and fine sense
Yet wanting sensibility the man
Who heedlessly sets foot upon a worm."

ENGLISH LITERATURE.

(Brooke's *Primer*, Scott's *The Lady of the Lake*, Milton's *Paradise Lost*, Books I. and II.)

THURSDAY, 27TH MAY:—MORNING, 9 TO 12.

Examiners, { VEN. ARCHDEACON LEACH, D.C.L.
J. CLARK MURRAY, LL.D.
CHARLES E. MOYSE, B.A.
REV. PROF. SCARTH, M.A.

1. Mention any literary work of King Alfred.

2. Give the author, the probable date, and the subject of the *Vision Concerning Piers the Plowman*.

3. Name two of the great Scottish poets of the period between Chaucer and Queen Elizabeth.

4. Give the authors, the probable dates, and the titles of the first English comedy, and the first English tragedy.

5. Name the authors of the following poems:—*Hudibras*, *Essay on Man*, *The Seasons*, *The Task*, *The Pleasures of Hope*, *The Excursion*.

6. Describe the subject (*a*) of *Paradise Lost*, (*b*) of the work which Milton wrote as a companion poem. (*c*) Name two of Milton's minor poems.

7. Describe the opening scene of *Paradise Lost*.

8. Explain the words in italics in the following phrases:—*orient* colours, *paynim* chivalry, *uncouth* way, they bend with awful reverence *prone*.

9. Who is alluded to in each of the following passages.

(*a*) "The potent rod

Of Amram's son, in Egypt's evil day,
Waved round the coast."

(*b*) "What resounds

In fable or romance of Uther's son."

10. Explain the nature of the versification in *Paradise Lost* and in *The Lady of the Lake*.

11. (*a*) State the name and locality of the lake of Scott's poem. (*b*) Name two other lakes in the immediate vicinity that are frequently mentioned in the poem.

12. Who are (*a*) the lady of the lake, (*b*) Roderick Dhu, and (*c*) Fitz-James?

13. Explain the terms *pibroch* and *coronach*.

14. Describe the superstitions referred to in the following passages:—

(*a*) "A grey-haired sire, whose eye intent
Was on the visioned future bent.

(*b*) "Thy father's battle-brand, of yore
For Tineman forged by fairy lore,
Did, self-unscabbarded, foreshow
The footstep of a secret foe."

(*c*) "Brian an augury hath tried,
The Taghairm called, by which afar
Our sires foresaw the events of war."

15. Tell the story of *The Lady of the Lake.*

N.B.—Additional marks, not exceeding 50, will be allowed for excellence of composition in this paper.

FRENCH.

MAY 22nd :—AFTERNOON, 2 TO 5.

Examiner,.....P. J. DAREY, M.A., B.C.L.

Translate into English :

Maître Jacques. Je m'en vais revenir : qu'on me l'égorge tout à l'heure ; qu'on lui fasse griller les pieds ; qu'on me le mette dans l'eau bouillante ; et qu'on me le pende au plancher. *Harpagon.* Qui ? Celui qui m'a dérobé ? *M. J.* Je parle d'un cochon de lait que votre intendant vient de m'envoyer, et je veux vous l'accommoder à ma fantaisie. *H.* Il n'est pas question de cela, et voilà Monsieur à qui il faut parler d'autre chose. *Le Commissaire.* Ne vous épouvantez point ; les choses iront dans la douceur. *M. J.* Monsieur est-il de votre souper ? *L. C.* Il faut ici, mon cher ami ne rien cacher à votre maître. *M. J.* Ma foi, monsieur, je montrerai tout ce que je sais faire, et je vous traiterai du mieux qu'il me sera possible *H.* Ce n'est pas là l'affaire. *M. J.* Si je ne vous fais pas aussi bonne chère que je voudrais, c'est la faute de monsieur votre intendant, qui m'a rogné les ailes avec les ciseaux de son économie.

Molière, l'Avare.

2. In what *tense* and *mood* are the verbs *égorge, fasse, mette, pende ?* Explain why.

3. Which of those four above verbs are regular and which irregular ? Account for your answer.

4. Write in full the positive and the interrogative forms of *je m'en vais, mette, fasse* in the *Preterite definite* and *Future anterior.*

5. Write in the plural the two first sentences of the above extracts ; from *Je* to *dérobé.*

6. Write in the plural : *carnaval, animal, époux, verrou, hibou,* and in the singular *procès, bals, fils* (in both meanings), *marteaux, amiraux.* State the rules according to which the first four form their plural.

7. Write the feminine of *gouverneur, paysan, chanteur, pêcheur, roi, grand, bon.* And point out those which form their feminine according to the general rule. Give that rule.

8. Write in full, in two different ways, May 22nd, 1880. What remark do you make on the ordinal number 22nd? Do you, or do you not put an *s* here for the French word 80?

9. When is *ce* a demonstrative adjective and when a demonstrative pronoun? What is its plural in either case?

10. Account for the two *l*'s of *appelle*. Give the first and third person plural of the Indicative present.

11. Parse the two words *parent* and *parent* as noun and verb. Translate them into English.

12. Translate into French:

It would be endless to describe the different sensations of both families when I divulged the news of our misfortune; but what the others felt was slight to what the lovers appeared to endure. Mr. Wilmot, who seemed before sufficiently inclined to break off the match, was by this blow soon determined; one virtue he had to perfection, which was prudence—too often the only one that is left us at seventy-two.

The Vicar of Wakefield.

GERMAN.

WEDNESDAY, MAY 26TH:—AFTERNOON, 2 TO 5.

Examiner,.....C. F. A. MARKGRAF, M.A.

1. Translate into English:—

(A) Und der Vater antwortete: „Der Wandersmann kann der Sterne nicht entbehren in der dunkeln Nacht; sie sind ihm die Führer seines Weges und leiten ihn, wann er sich verirret hat, wieder zu dem gesuchten Ziele. Ich will dich die Zahl und den Gang dieser himmlischen Lichter lehren, daß du sicher einhergehest auf deinen Pfaden, wann ich nicht mehr dein Führer bin. Und bald will ich dir noch andere Sterne zeigen; du kannst sie nicht sehen mit dem Auge des Leibes, aber im Geiste sollst du sie schauen, und sie sollen dich sicher hinüberleiten zur himmlischen Heimath."

Also sprachen die Beiden auf dem Wege mit einander; und ehe die Mitternachtsstunde vorüber war, standen sie klopfend an der Thür der heimathlichen Hütte.

J. H. Christ. Nonne.

(B) Hoch ragt aus schatt'gen Gehegen
Ein schimmerndes Schloß hervor,
Ich kenne die Thürme, die Zinnen,
Die steinerne Brücke, das Thor.

Es schauen vom Wappenschilde
Die Löwen so traulich mich an,
Ich grüße die alten Bekannten
Und eile den Burghof hinan.

. . . . . .

Ich tret' in die Burgkapelle
Und suche des Ahnherrn Grab;
Dort ist's, dort hängt vom Pfeiler
Das alte Gewaffen herab.

Noch lesen umflort die Augen
Die Züge der Inschrift nicht,
Wie hell durch die bunten Scheiben
Das Licht darüber auch bricht.

So stehst du, o Schloß meiner Väter,
Mir treu und fest in dem Sinn,
Und bist von der Erde verschwunden,
Der Pflug geht über dich hin.

A. von Chamisso

2. (See Ext. A & B) (*a*) Decline in both numbers:—der dunkeln Nacht; dieser himmlischen Lichter; der heimathlichen Hütte; die Löwen; des Ahnherrn; meiner Väter. (*b*) Write fully:—zur, vom. Instance other contractions of the def. article with prepositions.

3. (See Ext. A & B) (*a*) Give the Perfect Participles of antwortete, entbehren, einhergehest, sehen, hinüberleiten, ragt hervor, kenne, schauen an, eile hinan, lesen. (*b*) Give the Present Infinitive, and any other irregular forms you know of beside the one here given, of each of the following verbs:—kannst, sprachen, war, standen, bricht, verschwunden.

4. Give the meaning and derivation of Lüftchen, Vöglein, knöchern, Hütlein, Knäbchen, Köchin, Tüchlein, Müllerin, Gräfin, Städtchen, stählern, hörnern, Königin, Bäuerlein, sammeten.

5. (*a*) Give the Comparative and Superlative of kalt, stolz, schwach, nahe, groß, schwarz, hoch, warm. (*b*) How are adverbs compared in German? Explain.

6. Write down in letters the cardinal numbers from 70 to 80, and the ordinal from 10 to 25; and 111, 4076, 90305.

7. Translate:—Is this your friend? Who is that woman? That is her daughter. This house is finished (ready), but not that *one*. What books do you read? We read only good *ones*.

8. Give the Imperfect, Pluperfect and First Future of the Indicative (all persons) of ſenden, kommen and zumachen.

9. Translate into English :—

Wie nennt man die Bäume, deren Blätter immer grün ſind? Die Flüſſe vieler großen Länder ſind ſehr klein. Ich kenne dieſen Mann, aber ich weiß nicht, wo er wohnt. Dieſe Leinwand koſtet einen halben Gulden die Elle. Tragen Sie die neugekauften Möbel zu meinem Vetter. Ich hörte, daß Ihre beiden Söhne ſehr geſchickte Künſtler geworden ſind. Er zog ſeine Handſchuhe an, und ſetzte ſeinen Hut auf. Der Arzt verſchrieb der Kranken eine ſtärkende Arzenei. Haben Sie dieſe Leute gern? Er reiſ't ſchon ein ganzes Jahr lang. Die Dame, die wir geſtern beſuchten, führte uns in den großen Saal ihres ſchönen Landhauſes, um uns ihre alten Familienbilder zu zeigen. Ich werde dir übermorgen das Muſikſtück zurückſchicken, welches du mir vor einigen Tagen geliehen haſt.

GEOMETRY.

SATURDAY, MAY 22ND :—MORNING, 9 TO 12.

Examiners, ... { REV. PRINCIPAL LOBLEY, D.C.L.
GEORGE H. CHANDLER, M.A.

N. B. The following symbols and contractions may be used:

+, =, <, >, ∴, ∵, rect. AB. BC, sq. on AB.

1. Define the following: plane superficies, quadrilateral figure, circle, rhombus, rectangle, arc. What is the difference between a "plane angle" and a "plane rectilineal angle?"

2. From a given point draw a straight line equal to a given straight line.

a. From the given point how many straight lines can be drawn equal to the given straight line?

3. If at a point in a straight line, two other straight lines, on the opposite sides of it, make the adjacent angles together equal to two right angles, these two straight lines shall be in one and the same straight line.

4. In what proposition of Euclid's Book I. is it first shown that a triangle cannot be at the same time both right-angled and obtuse-angled? Enunciate and prove the proposition.

5. Parallelograms on equal bases, and between the same parallels, are equal to one another.

6. Describe a parallelogram that shall be equal to a given triangle, and have one of its angles equal to a given rectilineal angle.

7. If a straight line be divided into two equal parts and also into two unequal parts, the rectangle contained by the unequal parts, together with the square on the line between the points of section, is equal to the square on half the line.

a. Shew that if twice the rectangle contained by the two parts into which a line is divided be equal to the sum of the squares on the parts, the line will be bisected.

8. Divide a given straight line into two parts, so that the rectangle contained by the whole and one of the parts may be equal to the square on the other part.

9. If a straight line drawn through the centre of a circle bisect a straight line in it which does not pass through the centre, it shall cut it at right angles; and if it cut it at right angles it shall bisect it.

10. The angle at the centre of a circle is double the angle at the circumference on the same base, that is, on the same arc.

a. Hence show that the angle in a semicircle is a right angle.

11. In equal circles equal arcs are subtended by equal straight lines.

12. From a given circle cut off a segment containing an angle equal to a given rectilineal angle.

ALGEBRA.

FRIDAY, MAY 28TH :—MORNING 9 TO 12

Examiners, ... { REV. PRINCIPAL LOBLEY, D.C.L.
GEORGE H. CHANDLER, M.A.

1. Add together $1-\{1-(1-x)\}$, $2x-(3-5x)$, and $2-(-4+5x)$, and multiply the sum by $x-4$.

2. Multiply x^2+x+1 by $\frac{1}{x^2}-\frac{1}{x}+1$, and divide the result by the product of $x+1+\frac{1}{x}$ and $x-1+\frac{1}{x}$.

3. Prove that the sum of any two quantities multiplied by their difference is equal to the difference of their squares.

(*a*) Resolve x^4-y^4 into three factors, and $x-1$ into four factors.

(*b*) If the sum of two fractions is 1, show that their difference is equal to the difference of their squares.

4. Find the greatest common measure of x^5-x^4-x+1 and $5x^4-4x^3-1$.

5. Simplify and reduce to lowest terms the following:—

(*a*) $\dfrac{x-\dfrac{x-y}{1+xy}}{1+\dfrac{x(x-y)}{1+xy}}$, (*b*) $\dfrac{a^3+(a+b)ax+bx^2}{a^4-b^2x^2}$,

(*c*) $\dfrac{x(x+1)(x+2)}{3}-\dfrac{x(x+1)(2x+1)}{6}$.

6. Extract the square root of
$\frac{1}{4}x^4+\frac{1}{9}a^4-\frac{1}{3}ax(2a^2+3x^2-4ax)$.

7. What is an equation? How does an equation differ from an identity? Are the following expressions equations:—

$$\frac{x}{12}=\frac{2}{6}x-\frac{x}{4}; \frac{x}{12}=\frac{2}{6}-\frac{x}{4}?$$

8. Solve the following equations:

(*a*) $\dfrac{2x}{7}+\dfrac{x-1}{6}=x-4$,

(*b*) $10(x+\frac{1}{2})-6x\left(\dfrac{1}{x}-\dfrac{1}{3}\right)=23$,

(*c*) $\dfrac{a}{bx}+\dfrac{b}{ax}=a^2+b^2$.

9. How many values of x and y will satisfy the equation $3x-2y=5$? Which of all these values will also satisfy $2x+3y=4$?

(*a*) Find what values of x and y will satisfy both of the following equations:

$$\frac{x+2}{7}+\frac{y-x}{4}=2x-8,$$
$$\frac{2y-3x}{3}+2y=3x+4.$$

10. Nine years ago A was three times as old as B, but now he is only twice as old. Required the ages of A and B.

11. A certain fraction becomes $\frac{1}{3}$ if 1 be added to its numerator; but if 1 be added to its denominator, it becomes $\frac{1}{4}$. What is the fraction?

12. A mass of copper and tin weighs 80 lbs., and for every 7 lbs. of copper there are 3 lbs. of tin; how much copper must be added to the mass that for every 11 lbs. of copper there may be 4 lbs. of tin?

NATURAL PHILOSOPHY.

WEDNESDAY, MAY 26TH :—AFTERNOON, 2 TO 5.

Examiners,..... { REV. PRINCIPAL LOBLEY, D.C.L.
GEORGE H. CHANDLER, M.A.

1. What is meant by force? What science treats of forces viewed as producing motion? What is meant when it is said that a certain straight line represents a force?

2. State fully the proposition called the "Parallelogram of Forces."

3. Resolve a force of 10 lbs. into two forces making, the one an angle of 30°, and the other an angle of 60°, with its direction.

4. Show how to find the resultant of two forces acting upon a body in parallel directions.

5. Two weights of 2 lbs. and 5 lbs. balance one another at the end of a lever, the difference of the lengths of whose arms is 5 inches. Find the length of the lever.

6. What is meant by the centre of gravity of a body?

[*a*] Show how to find the centre of gravity of any plane triangular slab of uniform thickness.

7. A weight of 50 lbs. rests upon an inclined plane which makes an angle of 30° with the horizontal. It is supported by a rope which passes over a pulley at the top of the plane, and is wound round an axle 6 inches in diameter, which is turned by a handle 2 feet 3 inches long. What power must be applied at the end of the handle?

8. Write down the second law of motion.

[*a*] Find the statical force required to produce, in one second, a velocity of 8 ft. per second in a body weighing 20 lbs.; the velocity produced by gravity in a second being 32 feet per second.

9. A ball is thrown vertically upwards with a velocity of 48 ft. per second. How high will it rise? and in what time will it come down again?

10. A ball strikes a smooth table at an angle of 45°. If its velocity when it struck was 35 ft. per second, and the coefficient of elasticity be $\frac{1}{2}$, find the direction and velocity of the subsequent motion.

11. By what mechanical property of its particles is a fluid distinguished from a solid? (*a*) Explain the Hydrostatic Paradox.

12. What is the pressure upon a rectangular sluice-gate 25 feet broad and 9 ft. deep, the top of which is 7 ft. 6 in. below the surface of the water, the weight of a cubic foot of water being 1000 oz. Avoirdupois?

TRIGONOMETRY.

FRIDAY, MAY 28TH, AFTERNOON, 2 TO 5.

Examiners,..... { REV. PRINCIPAL LOBLEY, D.C.L.
GEORGE H. CHANDLER, M.A.

1. Taking the angle of an equilateral triangle as unit for the measurement of angles, what number would express the angle, 29° 36′ 30″?

On the same supposition what would be the measure of an angle of which the circular measure is $\frac{3}{4}\pi$?

2. Explain how you could determine, by a geometrical method, the angle of which the tangent (e. g. $\frac{3}{4}$) is given.

3. Express the cosine, cotangent and secant of an angle in terms of its sine.

4. Having given the trigonometrical ratios for the angle 60°, how could you at once deduce those of the angle 30°? Give the proof of the proposition on which your method depends.

5. Prove the following:

(*a*) $sec^2 A - 1 = sin^2 A\, sec^2 A$,
(*b*) $cot^2 A - cos^2 A = cos^4 A\, cosec^2 A$,
(*c*) $cos\,(A - B) = cos\,A\, cos\,B + sin\,A\, sin\,B$,
(*d*) $tan\,(A - B) = \dfrac{tan\,A - tan\,B}{1 + tan\,A\, tan\,B}$,
(*e*) $cos\,A + cos\,B = 2\, cos\, \dfrac{A+B}{2}\, cos\, \dfrac{A-B}{2}$.

6. If $sin\,A = \frac{1}{2}$ and $cos\,B = \dfrac{1}{\sqrt{2}}$, find $cos\,(A + B)$.

7. Given one side and the hypothenuse of a right-angled triangle, explain how the other parts may be found.

8. A person observes the elevation of a tower to be 60°, and on receding from it 100 yards further, he finds the elevation to be 30°; required the height of the tower.

BOTANY.

TUESDAY, MAY 25TH:—AFTERNOON, 2 TO 5.

Examiner,.....PRINCIPAL DAWSON.

1. Enumerate the parts of a complete Flower, state the structure and uses of one of them.

2. Name the parts of a Leaf, and describe the structures in the Blade.

3. Explain the differences of the Exogenous and Endogenous stems.

4. What structures are indicated by the terms, Spike, Bract, Umbel, Silique? Describe them.

5. Illustrate by figures the terms,—Cordate, Peltate, Oblong, Parallel-veined, Feather-veined, as applied to leaves.

6. Give examples of plants having Tubers, Bulbs, Corms, Rootstocks-Tendrils or Spines.

7. What chemical elements occur in wood and starch, and whence does the plant obtain these elements?

8. What structures are found in a maple seed, and how are they developed in germination?

9. To what series and classes do Pines, Indian Corn and Mosses belong, and on what grounds can they be so referred?

10. Trace any Canadian plant through the grades of the classification from the species upward.

11. Describe the flower exhibited; stating its parts and mode of inflorescence.

ELEMENTARY CHEMISTRY.

TUESDAY, MAY 25TH:—MORNING, 9 TO 12.

Examiner,.....B. J. HARRINGTON, B.A., Ph.D.

1. Distinguish between mixture and chemical combination, giving examples.

2. How much Hydrogen will be produced by decomposing water with 10 grammes of Potassium?

3. Describe the principal varieties of Carbon, and state what you know of their uses.

4. Name the principal constituents of coal gas, and describe one of them. Upon which does the illuminating power of the gas chiefly depend.

5. How is Sulphurous Anhydride prepared, and what are its properties?

6. What are the Halogens, and what their atomicity? Describe one of them.

7. Distinguish between Monobasic, Dibasic and Tribasic Acids, giving examples of each.

8. Describe briefly the manufacture of Soda from common Salt.

9. Give the symbols and atomic weights of Lead, Copper, Tin, and Arsenic. By what test may these metals be detected when in solution?

10. Give the chemical composition of the following substances: Plaster of Paris, Blue Vitriol, Iron Pyrites, Vermilion, Calomel.

GEOGRAPHY.

SATURDAY, MAY 29TH:—AFTERNOON, 2 TO 5.

Examiners,..... { VEN. ARCHDEACON LEACH, D.C.L.
REV. J. CLARK MURRAY, LL.D.
CHAS. E MOYSE, B.A.
REV. PROF. SCARTH, M.A.

1. What is meant by climate? How may climate be influenced?

2. Describe the outline of North America, and name the principal political divisions of that Continent.

3. Give the boundaries of the Dominion of Canada. Name its provinces with their capitals.

4. What are the principal industries of Canada.

5. Name the States of New England with their chief towns.

6. Enumerate the colonies and possessions of the British Empire in the different parts of the world.

7. Give the boundaries of France. Name its principal rivers.

8. State how British India is divided. Describe its climate.

9. What large island is on the East coast of Africa? Describe the course of the River Nile.

10. What does Australasia comprise?

McGill University Library
3 103 858 487 8